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INCORPORATION.

THE International Land and Immigrant Union of New York has been incorporated, with a capital of \$250,000.

A COMPANY has been organized, with a capital of \$1,000,000, to bridge the Missouri River at Blair, Nebraska.

THE Brooklyn District Telegraph Company of Brooklyn, N. Y., filed a preliminary certificate of incorporation at Albany on the 10th inst. Its capital is to be \$125,000.

THE North American Construction and Improvement Company of New York, capital \$1,000,000, has filed articles of incorporation with the Secretary of State at Albany.

THE Gay Machine and Tool Company, Boston, Mass., has been incorporated. Wm. P. Gay, president; Herbert W. Kimball, treasurer; capital \$10,000—one hundred shares.

A CHARTER was granted at Harrisburg, Penn., on the 14th inst., to the Bradford Bridge Company, of Pittsburgh, which proposes to erect a bridge across the Youghiogheny River at Bradford, Fayette county. The capital stock is \$100,000.

THE Foster Coal and Iron Company, of Indiana county, Penn., with a capital of \$200,000, has been granted a charter. The office of the company is to be in Philadelphia. The stockholders are B. K. Jamison, W. W. Stewart, Frank R. Snowden, A. G. Plumer, and W. L. Nevin.

THE Northwestern Manufacturing and Car Company, Stillwater, Minn., was organized May 2, 1882, with a capital of \$5,000,000, purchasing the business of Seymour, Sabin & Co. They employ 1,200 hands, and make, besides threshers and farm engines, freight and passenger cars.

A CERTIFICATE of incorporation was filed in the office of the Secretary of State at Albany, on the 10th inst., of the Standard Oil Company of New York; capital, \$5,000,000. The incorporators are: William Rockafellar, J. A. Bostwick, Benjamin Brewster, O. B. Jennings and Charles Pratt.

THE new Indianapolis Board of Trade, which was incorporated on the 10th inst., is a consolidation of the former Board of Trade, the Merchants' Exchange, Mercantile and Produce Exchange; and the Association starts under the most favorable circumstances, with a fund of \$15,000 in the treasury.

A CERTIFICATE has been issued to the Greenbrier, West Va., Stock Yard Company, for the purpose of establishing, managing and carrying on stock yards and pens, where live stock of all kinds can be loaded, unloaded and fed, rested, watered and cared for, and where live stock can be bought, sold and otherwise disposed of.

THE Genesee Valley Terminal Railroad Company was incorporated on the 14th inst. The company is to continue 99 years. The road is to be constructed from or near a point in the center of the line of the Genesee Valley Canal Railroad in the town of Chili, Monroe county, New York, and thence by the most direct route taking in the towns of Chili and Gates, to a point on the line of the New York Central and Hudson River Railroad, about 800 feet west of the intersection of that road with the Buffalo Railroad in the town of Gates. The capital is \$500,000.

CONSOLIDATION.

AT a meeting of the directors in Wabash, Ind., on the 10th inst., the Cincinnati, Wabash and Michigan and the Elkhart, Niles and Lake Michigan railroad companies were consolidated under the name of the "Cincinnati, Wabash and Michigan Railroad Company." The Elkhart, Niles and Lake Michigan is the extension north of the Cincinnati, Wabash and Michigan, organized under the Michigan laws.

THE scheme for the amalgamation of the Great Western and Grand Trunk railway companies of Canada was confirmed at the extraordinary meetings of the shareholders of both companies held for that purpose in London, England, on the 10th inst. In the poll on the question of amalgamation the majority of the Great Western shares in favor of the scheme was 111,435. All the books of both companies were closed in Canada at midnight of the 11th inst., and new ones opened in the name of the amalgamated roads. The formal transfer of the Great Western to the Grand Trunk took place on the 12th inst., Messrs. Hickson, Wainwright, and other Grand Trunk officers being present in Hamilton on that day for that purpose. The united line will be known as the "Grand Trunk Railway Company of Canada." The new through route from the west to the east is expected to be by Sarnia, then by the Sarnia branch to London, thence to Paris, and then to Buffalo. This will shorten the trip

from New York to Chicago some 50 miles over the present Great Western and Grand Trunk route.

ORGANIZATION.

THE Amalgamated Iron Workers' Association at Chicago on the 10th inst. elected John Jarrett, president; William Martin, secretary; Samuel S. Wainwright, William Weihle and Edward Rodgers, trustees, and George W. Perry, treasurer. The association then adjourned to meet next year at Philadelphia.

AT the recent annual meeting of the stockholders of the Portsmouth and Dover Railroad Company, the following gentlemen were elected directors for the ensuing year: Frank Jones, Daniel Marcy, Joseph A. Walker, John S. Treat, of Portsmouth; Charles H. Sawyer, Frank A. Christie, Charles M. Murphy, of Dover. At a subsequent meeting of the directors Frank Jones was elected president, George L. Treadwell, treasurer, and Calvin Paige, clerk.

AT the annual meeting of the stockholders of the Boston, Hoosac Tunnel and Western Railroad Company, held at Saratoga on the 16th inst., the following directors were elected unanimously: Robert Minturn, Lewis May, Augustus Kountze, Cyrus J. Lawrence, George J. Forrest and W. H. Hollister, of New York; Ginery Twitchell, of Brookline, Mass.; Frederick L. Ames, of North Easton, Mass.; Elisha Atkins, of Boston; David B. Hatch, of Brooklyn, Conn.; Josiah Case, of Vernon, N. Y.; Estes Howe, of Cambridge, Mass., and W. V. Reynolds, of Schaghticoke, N. Y.

AT the annual meeting of the St. Johnsbury and Lake Champlain Railroad Company, held at St. Johnsbury, Vt., on the 9th inst., the following gentlemen were elected directors for the ensuing year: Horace Fairbanks, Franklin Fairbanks, George W. Hendee, Thos. Coggeshall, Bradley Barlow, A. B. Jewett, Henry D. Hyde, A. B. Harris, Wm. P. Fairbanks. The directors organized by the choice of Horace Fairbanks, president; Franklin Fairbanks, vice-president; William P. Fairbanks, secretary and treasurer; Horace Fairbanks, Bradley Barlow, executive committee.

THE stockholders of the Green Bay, Steven's Point and Northern Railway Company met at Green Bay, Wis., on the 15th inst., and elected the following directors: John I. Blair, Walter C. Larned, John D. Vail, Timothy Case, Theodore T. Case, W. J. Abrams, F. E. Teetshorn, W. R. Hancock, and J. E. Rawlings. At a sub-

sequent meeting of the directors the following officers were elected: John I. Blair, of Blairstown, N. J., president; Timothy Case, of Green Bay, vice-president; W. J. Adams, of Green Bay, secretary; Theodore Sturges, of New York, assistant secretary and treasurer; Timothy Case, treasurer. At the same meeting the Green Bay, Steven's Point and Northern Railroad was leased to the Green Bay, Winona and St. Paul Company.

CONSTRUCTION.

THE Ohio Central Railroad was completed to Corning on the 10th inst.

THE Wheeling and Lake Erie Railway was formally opened to travel on the 17th inst.

THE Oregon and California Railroad was completed to Myrtle Creek, Oregon, on the 2d inst.

WORK on the Canadian Pacific Railway construction has now reached 347 miles west of Winnipeg, and rails are being laid at the rate of three miles a day.

THE Clark's Forks division of the Northern Pacific Railroad was opened for freight and passenger business to Noxon, 493 miles east of Portland, Oregon, on the 1st inst.

THE Oregon Short Line Railroad, a new road building by the Union Pacific Railway Company, starts at Granger, Wyoming, and is now in operation to Cokeville, Idaho, 85 miles.

SURVEYORS in the employ of the Long Island Railroad Company are engaged surveying a route for the extension of the Montauk Railroad from Sag Harbor to Fort Pond Harbor, Montauk.

THE completion of the Council Bluffs division of the Chicago, Milwaukee and St. Paul Railway makes the entire length of the St. Paul system of roads 4,350 miles. It is operated in 16 divisions.

THE Pensacola and Atlantic Railroad Bridge over the Escambia Bay, Florida, $2\frac{1}{2}$ miles long, was finished on the 15th inst., and trains passed over it. Forty-seven miles of the road are now open for transportation.

THE Toluca Division of the Mexican National Railway, extending from the City of Mexico to the city of Toluca, was approved by the Government on the 9th inst., and the road is now opened to public traffic.

A NEW railroad is projected from Toledo to Grand Haven, Michigan, about 180 miles, to be called the Ohio and Michigan Railroad. Arrangements are to be made to utilize the dockage of the Ohio Central Railroad at Toledo.

THE Northern Pacific Railroad Company has completed two additional sections of its road. Commissioners will soon be appointed to examine the work. One of the completed sections is in Idaho and the other in Montana. The two sections cover about 140 miles.

THE Buffalo extension of the Buffalo, Pittsburgh and Western Railroad will be in running order by September 1st. The rails are laid to the Erie crossing in Buffalo. The cars will enter the Buffalo, New York and Philadelphia depot, corner of Louisiana and Exchange streets.

TRACK-LAYING on the new line of the Wisconsin

sin Central—the Milwaukee and Lake Winnebago Railway—has commenced at Schleissingerville. The contractors expect to have the road completed from Milwaukee to Oshkosh by September 15, and ballasted and otherwise in full running order by October 15.

THE second track of the New York and Long Branch Railroad, on which work was begun three months ago, is completed. The rails of the old track are being replaced, as fast as worn out, with the finest quality of steel rails. The guard rails and string beam-guards on the bridges of the road are also completed.

THE construction of the Canadian Pacific north of Lake Superior will be begun this week from Prince Arthur's Landing to Nepigon. Five or six engineering parties are exploring along the north shore of Lake Superior, and contracts for construction of the whole section from Nepigon to Lake Nipissing will be let early next year.

THE Southern Pacific Railroad has been opened for traffic to Lozier, 358 miles east of El Paso and 29 miles from the Pecos crossing. The connection with the Galveston and San Antonio will be made at the latter point about October 1; less than 15 miles of track remaining to be laid, grading on which is well advanced. Over 5,000 men are employed on the two approaching tracks.

THE Utah extension of the Denver and Rio Grande Railway has been completed to Cimarron, 330 miles from Denver and 407 from Salt Lake City. As the company has now in operation about 108 miles of road extending eastward from Salt Lake City, less than 300 miles remains to be built to complete connection in this link. The grading is nearly finished and the preparations made for rapid track-laying indicate that this new through line will be opened by December 31.

A CIRCULAR will soon be issued inviting subscriptions for the building of the Topeka, Salina and Western Railroad of Kansas, of which C. G. Patterson, late of the Connerton Valley Railroad is contractor. The directory is E. P. Phillips, Charles A. Rogers, S. D. Loring and J. Otis Wetherbee, of Boston; Josiah B. French, of Lowell; Jacob Safford, D. W. Storck and M. Bosworth, of Topeka; C. E. Foulkner and O. P. Hamilton, of Salina; Weston Arnold and M. A. Shamleffer, of Council Grove, and T. C. Henry, of Abilene.

A DISPATCH dated City of Mexico, August 10, says: The Tehuantepec Railroad Company having forfeited its charter, the Mexican Government has resolved to complete the road as soon as possible. The company will be paid for the work done and the material on hand. The work will be continued under the charge of General Porfirio Diaz, as Governor of Oaxaca. Delfino Sanchez, ex-superintendent of the Morelas Railroad, has been appointed purchasing agent. He will soon start for the United States and Europe to buy rails and rolling-stock.

VICE-PRESIDENT HOPKINS, of the Wabash, St. Louis and Pacific Railway Company, has given orders for the completion of the line from Albia to Des Moines. Work upon this line has been in practical suspension during the summer.

When completed it will have excellent terminal accommodations in Des Moines and a new line will come into existence between the capital of Iowa and St. Louis. Directions have also been given by Mr. Hopkins for the completion of the air-line to Shenandoah. This line is now the joint enterprise of the Wabash and the Chicago, Burlington and Quincy. When finished to Shenandoah it will be used by the Wabash as the main route between Chicago and Council Bluffs.

Paris as a Seaport.

THE French Society of Civil Engineers have recently had under consideration a project of M. Bouquet de la Grye, hydrographer to the navy, for rendering Paris accessible to ships with a draught of six or seven metres (say 23 feet). He proposes to deepen the Seine bed by dredging and to lower the water level between Rouen and Poissy, so forming a maritime basin about 103 miles long and 150 feet in width, twice the width of the Suez Canal. The excavation would progressively reach a depth of about 53 feet below the present bottom at Poissy, and the water level would be lowered about 40 feet. The quantity of matter to be removed is estimated at the enormous figure of 75,000,000 cubic metres. Only the sharper curves of the river should be avoided; bridges should be raised or rendered movable. At Poissy vessels should rise by a "cascade" of locks, about 110 feet in the forest of Saint Germain, to an upper canal, fed with water from the Seine by means of turbines driven by the fall of Seine water at the locks of Poissy. This canal would extend to Aubervilliers, passing above the Seine and the railways; its level would be nearly that of the canal of La Villette. There should be two harbors, a lower and an upper, at the borders of the forest of Saint Germain, and ships going to the higher canal should not interfere with those at the lower port, whence transatlantic merchandise should be sent straight to the Rhine Valley. The expense of the lower canal between Rouen and Poissy is estimated at 150,000,000 francs, that of the upper about 100,000,000 francs. The scheme has been vigorously discussed, and some eminent engineers have taken grave objection to it. Among other points the new behavior of the water of the Seine at low water and in times of flood, the maintenance of the new bed, the expense of execution (thought to be underestimated), are noted as presenting difficulty. The problem of the bridges between Rouen and Poissy is not regarded as easily soluble. It is asked, How will the regime of rivers or streams entering the Seine between Rouen and Poissy be affected? How are their mouths to be treated so as to maintain their water level and avoid damage to property on their banks? What of the strong drainage of land along the Seine, with resultant injury to cultivation from lowering the level of the river? Will not the waterfalls at works, the foundations of houses, wells, springs, in a word, property generally, be gravely compromised?

THE Cairo *Argus-Journal* of the 11th inst., says that the new Cairo and Texas Narrow-Gauge Railroad is likely to be well supplied with locomotives. Two more went through for it on the Wabash yesterday.

Central American Progress.

THE industrial development of the Central American republics is of increasing commercial interest to the people of the United States. The five republics, Guatemala, Salvador, Honduras, Nicaragua and Costa Rica comprise the territory that lies between the ninth degree and the sixteenth, north latitude—between the Isthmus of Panama and Mexico. In richness of soil, in mineral deposits and in climate on the plateaus this region surpasses almost all other parts of the continent.

COSTA RICA.

Costa Rica, the smallest of these states, has a white population of 250,000; it annually exports 15,000 tons, chiefly coffee, valued at \$3,000,000; it annually imports about 15,000 tons, valued at \$2,500,000. The Costa Rica Railroad was planned for an interoceanic route between Port Lucian (10 degrees north latitude) on the Atlantic to Punta Arenas (9 degrees 50 seconds north latitude) on the Pacific, a total distance of 173 miles. It was built by the Government and is under the control of the Government. It is divided into three divisions, to wit: The Atlantic Division, 100 miles; the Central Division, 27 miles; the Pacific division, 46 miles. Of the Atlantic Division 73 miles are in good running order. Then 27 miles of well built carriage road connect with the Central Division at the capital, San Jose. The Central Division, 27 miles, which had been running since 1873, connects the four principal towns on the mountains, and is chiefly a passenger line. The Pacific Division has twelve miles in running order from Punta Arenas, Gulf of Nicoya, eastward to Esparta. The gauge of the Costa Rica road is three feet six inches and the greater part of it is laid with English steel rails and native hard-wood ties. Its maximum grade is 210 feet per mile and its maximum curvature 32 feet. The rolling-stock is of American manufacture. The cost per mile has been from \$70,000 to \$80,000, on account of the extremely difficult ground and the number of costly bridges.

The road, according to an agreement lately entered into with the British bondholders, will be turned over to their management for 99 years, under obligation on their part to finish the rail connection between the Atlantic and Central divisions at an estimated cost of \$4,000,000. In this agreement is included a settlement of Costa Rica's foreign debt in England of some £3,000,000, reducing the interest from 6 and 7 per cent to 3½ per cent per annum, and the Government engaging to pay, outside the railroad settlement, about £100,000 per annum. The combined railroad and carriage road of the Atlantic Division carries at present most of the imports and the exports of the country at an average cost of \$35 per ton. The traffic of Costa Rica may be fairly estimated to-day at 24,000 tons to and from the Atlantic port, and 6,000 tons to and from the Pacific port.

NICARAGUA.

The Republic of Nicaragua has two natural outlets, one over the lakes and San Juan River to the old port of San Juan del Norte, or Greytown, which, however, since 1862, has been

completely sanded up and at present can be called only an open roadstead, and the other to the two ports on the Pacific, San Juan del Sur and Corinto.

Of the 600,000 inhabitants the most are colored and live on the Pacific slope. The export trade, principally hides, rubber, coffee, sugar and dye-woods, amounts to about 10,000 tons, valued at \$2,500,000, and the import of foreign goods to about 10,000 tons, valued at \$2,000,000. One-third of the trade goes to the Atlantic and two-thirds to the Pacific ports.

The Nicaragua Railroad is building by the Government. It is to connect the port of Corinto, via Chinandega and Leon, with the Lake of Managua at Moabita, a distance of fifty-six miles, on extremely favorable ground. Thirty miles of it are finished and in running order, well constructed and equipped, at a cost of about \$20,000 per mile. It is three feet six inches gauge, laid with English steel rails; maximum grade 60 feet per mile, with very easy curvature. The rolling-stock is of American manufacture. The bridges of this road, one of them 1,400 feet long, have been built from American plans and specifications in Germany. Nicaragua is the principal cattle-raising country of Central America and partly provides Costa Rica and Salvador with cattle.

HONDURAS.

This state should have its natural outlet towards the Atlantic, for only a small part of its territory borders on the Pacific and has Amapala as a port, but the greater part of its imports, 6,000 tons annually, and its exports, 9,000 tons (coffee, hides and dyewoods), goes by the latter port. Honduras has a mixed population of about 600,000. This is the poorest of the Central American republics, but it is developing fast under a good Government. The country is rich in silver mines, which, however, are not yet worked. Although more than £4,000,000 were signed and contracted for in London towards the building of an interoceanic railroad, the State of Honduras claims never to have received a dollar of the loan, except indirectly through a small section of railroad (43 miles from Port Cortez, on the Caribbean Sea, towards the interior). On this the loan of about \$1,500,000 was spent by the British contractors, Messrs. Waring Brothers, and their work ceased. According to the latest news the present Government has made an arrangement with the English bondholders by which the repairing and construction of the railroad will be taken up again. The road as originally laid out is of three feet gauge, 470 feet maximum grade and 30 feet curvature. The distance is 265 miles, and it is estimated that the road will cost \$50,000 per mile.

SALVADOR.

This is at present the most prosperous and the wealthiest state of Central America. A greater part of the territory is under cultivation, and it has a greater variety of exportable products than the other states, whose chief exportable product is coffee. The low price of coffee during the last two years has caused heavy losses to the planters and to many of the importers. Salvador is the only state of Central America that has no Atlantic coast-line. Its whole area lies on the Pacific slope; and its three ports are Port Union on the Fonseca Bay, Port Libertad and Port Acajutla. Its population, of 750,000, consists mostly of Indians, but they are peaceful and industrious. The value of the exports is about \$5,000,000, and of the imports from \$2,500,000 to \$3,000,000. The former consists principally of coffee, sugar,

indigo, tobacco, balsam, hides, dyewoods, rubber, deerskins and silver ore.

A railroad from Port Acajutla in favorable railroad ground, has been built 15 miles by native capital at a cost of \$22,000 per mile equipped. It has English steel rails and American rolling-stock, and has this month been opened for traffic. The company enjoys a Government guarantee of 12 per cent per annum on \$400,000 for 25 years. The same company holds a commission for an extension of its present line from its upper terminus at Sansonate to the city of Santa Ana, a distance of about 40 miles, at an estimated cost of about \$30,000 per mile. For this the greater part of the capital has been subscribed at home under a Government guarantee of 8 per cent. The gauge of this Salvador road is the three-feet gauge, or standard American narrow-gauge. Another commission has been given to a native company, under 8 per cent guarantees upon \$1,000,000, for a railroad from Port Libertad to the capital of San Salvador, distance 25 miles, heavy ground, with steep grades and small curvature. A third commission, approved by this year's Congress, also for a narrow-gauge road, has been given to a New York capitalist, and embraces a central line through the republic from Port Union to the frontier of Guatemala, distant about 200 miles. The Government subsidizes this commission with \$10,000 per mile and guarantees for 25 years a net earning annually of \$1,000 per mile. The probable cost of this line equipped may be about \$30,000 per mile. No surveys, however, have yet been made.

The last road may eventually be the most important of all, for it will be an outlet for the whole country towards the best part of Central America. And the enormous pier and shipping expenses of the other ports will be avoided by it. The idea is to connect eventually this central line with the Guatemala and Mexican roads.

GUATEMALA.

This state is the largest of the Central American republics and has developed considerably during the last decade, through its increasing coffee culture. The same effect of the extremely low prices of this article has been felt there as in the other states. Coffee which sold five and ten years ago for \$15 to \$18 per hundred-weight on the plantations has been sold during the last year for from \$7 to \$8—a price which barely covers the cost of production. Guatemala has about 1,500,000 inhabitants. Most of the people live on the Pacific slope. The imports and exports almost entirely go through the two open roadsteads, San Jose and Champerico, on the Pacific. The exports and the imports are each about 15,000 tons. There are in Guatemala very extensive sugar estates, which could provide California easily with 15,000 or 20,000 tons of sugar per annum. On account, however, of the Sandwich Islands treaty the sugar export from Central American States is out of the question. This is certainly a great drawback to the general development of these republics.

The first railroad built in this State, from Port San Jose to Escuintla (half-way up to the capital), a distance of 30 miles, was opened in June, 1880, and the dividend declared upon the earnings of the first five months of this year was 9 per cent on the capital of \$1,000,000. The gauge is the metre gauge, 39½ inches; maximum grade, 4 per cent; smallest curve, 24 degrees. It has rails and American rolling-stock. The original cost of the road equipped was \$22,000 per mile. Another concession was given to the owner of the lower line for the extension to the capital, a distance of 38 miles, now in the course of construction. The Government subsidizes this extension with \$125,000 per annum for 25 years, and advances to the construction company \$500,000 of this subsidy. This enterprise has just been sold out to a New York company. Another concession has been granted to a syndicate of California capitalists for a road from Port Champerico to the foot-hills at Retalulen, and work has been begun. It is subsidized by the Government similarly to the San Jose Guatemala road.

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CONSCIENCE.

THE above word has been defined by theologians to mean that quality possessed by human beings that decides between right and wrong. It is supposed to be the power within a man, when implicitly obeyed, that keeps him from doing wrong and leads him to do right. How far this is true, we are not prepared to state; but we are ready to admit that in many cases it is not true. We have historical record of many acts performed which the perpetrators did from a good conscience, as they supposed, but the results plainly indicate that such were the works of the Evil One, and radically false and wrong. We need not be very well read to know of such results. The Bible has one very notable instance, that of Paul persecuting the Christians. When he became converted he claimed that he persecuted them out of a good conscience, verily thinking that he was doing God service. He did not offer this explanation as an excuse for so doing, but simply as a reason. Now we all know that Paul's persecution of the Christians was a wrong thing to do, even though his conscience told him it was the right thing. Paul's subsequent life proves that he came to look upon this persecution as the very opposite of right, and yet, when he was engaged in it, he was ready to lay down his life to prove that he was right, his conscience approving the act. There may be some who deny that the story of Paul and his persecuting the Christians is true, and claim that it has no more foundation in fact than any other work of fiction. This article will lose nothing by granting this claim, any more than the advocates of the universality of sin lose anything by parties denying the literalness of the scene in the Garden of Eden. That scene may be mythical, but it conveys a fact of which every person is conscious, that sin reigns in the human body to the loss of happiness to the human being. So this story of Paul and his persecuting labors may be mythical; but the truth conveyed remains the same—that we may do things from a good conscience, and the acts so done be radically and entirely wrong. We say the truth remains the same, because we claim that each man has his own individual experience confirming it. We remember a church where they disciplined the members guilty of dancing, looking upon this recreation as one of the Devil's arts to lead souls astray. We have no question that many have been thus led astray, but this is no excuse for punishing those who can indulge in it to their own profit and pleasure without experiencing harm. Now men have been excommunicated for dancing whose lives were far more blameless than the parties engaged in

casting them out, yet these latter considered they were doing God service and were acting from a good conscience. Some years ago a church cast a great and good man out of its fold for singing religious songs. There is no question but what the church acted from a good conscience, and so did the man who sang the hymns. The great world outside of the church looking on did not take long to decide which conscience seemed the best and nearest right. To-day we are talking about the slack attendance of our churches and the spread of infidelity, and many reasons are assigned to account for these conditions.

One reason will cover the whole ground. One intolerant, bigoted church member, acting from a good conscience, will do more to empty a church and make infidels than can be done by the grossest immorality.

But let us take our personal experiences of acting from a good conscience. One man does not hesitate to throw dice and play cards any day in the week, but refuses to do so on Sunday. Yet the same man will go fishing on Sunday and think he is doing no harm. Another man will sit at the table with a party of men and raffle for drinks, cigars and turkeys, and will not raffle for a quarter of a dollar. If he loses when raffling for drinks, cigars or turkeys, he will lose more money than if he raffled for twenty-five cents and lost. He engages in the first on the plea of sociability and enjoyment, and declines the latter because he considers it gambling. A man will play croquet until he is so excited that he can hardly refrain from cheating, and then condemns the billiard table as a thing to be shunned with holy horror. A woman is careful to tell the truth when she speaks, and yet considers it no harm to lie with false hair, which she passes off as her own, with paste stones in ear-rings, which she hopes people will believe to be diamonds, with imitation lace on her dress, which she expects people to accept as real.

One more illustration. A man who would die sooner than take a dollar as a thief, or have a bill presented to him the second time, does not have any pangs of conscience when he lends his name to raising funds for building a railroad, which may end as it began, on paper. He may by this course impoverish more people than any thief ever did or could, and get more money into his own pocket than it is possible for a thief to do, yet his conscience does not rebuke him as it would were he to steal or defraud, as such terms are defined by law.

What shall we then claim for conscience? We cannot claim that it is an inward monitor deciding questions of right or wrong, for we all know of many cases where it has proved an

entire failure. The most we can do for it is to divest the word of all meanings theologians have given to it, and return to its first meaning—self-knowledge. This is all it really means, and if we accept this definition we can readily embrace the doctrine that conscience was given to us as a guide to our own actions, and not to control or judge the actions of others. It then becomes our duty to train the conscience to decide from a knowledge of the facts as they exist, and not from a knowledge of our desires and feelings. When something is brought before us that we are not in sympathy with, we must have a conscience trained to that degree of perfectness that we shall not cast the thing aside until the facts warrant us in so doing. We shall find many times that the facts, as they exist, are opposite to our desires and feelings.

The Grand Trunk Fusion.

THE Grand Trunk Railway and Great Western of Canada were at midnight united in the iron bonds of matrimony, and this morning start upon the wedding tour, it is to be hoped, to prosperity, usefulness, and fair dealing with the Canadian public. The shareholders have themselves tied the knot, and the management of the household will be in the hands of the better half of the pair, the Grand Trunk Railway. The public has had ample warning of the fusion of these railways and the result has been forecast in all sorts of colors. The public, will, of course, be likely to lose in competition with local points, principally in Ontario, and can be squeezed unmercifully if the new partners so elect. A strong public opinion must be exercised, therefore, in such localities and any undue interference with the trade of the country checked at once.

The system of the Grand Trunk Railway, now that it has absorbed the Great Western, covers 3,330 miles of line. The old Grand Trunk, 1,511 $\frac{1}{2}$. The Great Western and affiliated lines, 822 $\frac{1}{2}$; Midland of Canada, 471; Chicago and Grand Trunk, 335; Detroit, Grand Haven and Milwaukee Railway, 189. The question of this fusion has been held before the public for a good many years, and when application was made to Parliament for an act of amalgamation twenty years ago, Parliament rejected it.

Orders having been issued last evening by the Grand Trunk Railway to that effect, the employes of the Company along the line made up their accounts to midnight as the old Grand Trunk, and commenced under the new marriage or fusion contract from the expiration of that hour. There had been no further orders issued at that time, but doubtless some radical changes will be experienced along the line of the companies West, especially as to the number of employes. As the Canadian Pacific progresses very rapidly there will be probably openings enough for those who may in the exigencies of the case be dropped from the service roll of either railway.—*Montreal Witness, Aug. 12.*

Boston and New York Air Line Lease.

THE Boston and New York Air Line Railroad, extending from New Haven, through Middletown to Willimantic, Conn., where it connects with the New York and New England Railroad Company's lines to Boston and Providence, is now run under a 99 years' contract to the New York, New Haven and Hartford Railroad Company. By the terms of the contract, as originally made, the Boston and New York Air Railroad Company was to receive for the use of its road 6 per cent of the gross earnings of the New York, New Haven and Hartford Railroad Company and its branches, in lieu of any other rental. The terms of this contract, made in 1878, were to be subject to revision once in five years; and at the end of two years, at the request of the New York, New Haven and Hartford Railroad Company, a revision of the contract was had. This new contract gave to the Air Line Co. 5 per cent of the gross earnings, in lieu of 6 per cent. This reduction was not made without considerable opposition on the part of some of the stockholders of the Air Line Company, who claimed that it was an unjust one, and that the earning power of their road entitled them to more liberal terms. It was ascertained, however, that no better terms could then be made with the New York, New Haven and Hartford Company, and the new contract at 5 per cent was closed, a provision being made that it could be terminated by either road on suitable notice. Such notice was given the New York, New Haven and Hartford Company some time ago, and in place of this contract an agreement has now been prepared by the directors of the Air Line Company to lease its road and rolling-stock to the New York, New Haven and Hartford Company. This lease has been submitted to and accepted by the board of directors of the New York, New Haven and Hartford Company. Before the lease can be perfected, however, it must be accepted, in accordance with the laws of the State of Connecticut, by the stockholders of both the parties to the lease. The stockholders of the New York, New Haven and Hartford Railroad Company will hold their annual meeting and consider this lease at New Haven, Conn., on September 6, and the stockholders of the Boston and New York Air Line Railroad Company will hold their meeting at Middletown, Conn., and pass upon the lease on September 13.

By the terms of the lease, the New York, New Haven and Hartford Company agrees to pay an annual rental of \$120,000, in two instalments of \$60,000 each, payable in April and October of each year, beginning in April, 1883. This is virtually paying 4 per cent interest to the preferred stockholders of the Air Line Company. This stock amounts to \$3,000,000. The lessee also agrees to keep the property of the lessor in as good condition as when delivered to it, and to restore it to the lessor in equally good condition at the termination of the lease, in 99 years from Sept. 30, 1882. It also agrees to pay all taxes and assessments, all running expenses, and expenses incidental to necessary repairs and improvements. It further agrees to pay the interest on the \$500,000 of first mortgage bonds and on the \$25,000 guaranteed mortgage

bonds issued for the construction of the Colchester branch of the road, or the interest on any bonds issued in their stead, providing that such interest shall not exceed \$26,750 per annum. Should the terms of this lease be ratified, it will virtually operate to convert the preferred stock of the Air Line Company into a 99-year bond bearing 4 per cent interest. Under the existing contract the Air Line Company has been able to pay a 4 per cent dividend after paying the interest on the bonds and the operating expenses, and has had a surplus left, which has been used in improving the road-bed and providing rolling-stock, rails, etc. The directors and many of the preferred stockholders preferred, however, to have lease with a 4 per cent dividend guaranteed rather than to trust to securing such a dividend upon the terms of a contract liable to alteration once in five years. It is asserted by railroad men that the New York, New Haven and Hartford Company will be very willing to obtain the road upon such favorable terms, even if it is not run so as to satisfy the demands of local traffic, and thus made a paying investment. The reason for this assertion is that it will place under their control a road which might become a dangerous and powerful factor in establishing a rival route between New York, Providence, Boston, and other points east. That control they can well afford to pay a couple of hundred thousand dollars a year to retain.

The Canada Northwest Land Company.

M. LE RUEY has communicated to the *Ontario Free Press* the following particulars of this company, which has been commonly spoken of as the "Duke of Manchester's Company." The capital, he says, is £3,000,000, in shares of £10 each, of which it is not anticipated to call up more than £5 per share at present, the balance of the purchase money of the lands being proposed to be raised by debentures of the company secured on the lands of the company and on its unpaid capital. The Duke of Manchester is the chairman, and the Canadian directors are D. A. Smith of Montreal, Alexander G. Ramsay of the Canada Life Insurance Company, Hamilton, G. B. Osler and W. B. Scarth, of Toronto, the two latter of whom are to be managing directors in Canada. It is stated in the prospectus that 5,000,000 acres of the Canadian Pacific Railway Company's lands in the Northwest Territory are to be acquired, together with half the railway company's interest in the sites of all the towns and villages located during construction, or within a year thereafter. It is proposed to offer to the Land Corporation of Canada one-twelfth interest in the land so to be acquired at cost. The net price paid by the company for the farming lands is stated to be about \$2.73 per acre. The town and village sites upon the railway company's land grant are to be acquired at the same rate. The prospectus also states that the railway company has suspended its sales of lands in quantity, and has expressed its intention to confine its future sales to individual purchasers in small holdings.

TRAIN up a child, and away it 'll go.

THE STOCK EXCHANGES AND MONEY MARKET.

New York Stock Exchange.

Closing Prices for the week ending Aug. 16.

	Th. 10. F. 11. Sat. 12. M. 14. Tu. 15. W. 16.
Adams Express....	140 140 140 140 140 140
Albany and Susq....	1st mortgage....
2d mortgage....	1st mortgage....
American Express....	95 1/4 94 1/2 94 1/2
Burl. C. R. & Nor....	102 1/2 102 1/2 102 1/2 102 1/2
1st mortgage 5s....	102 1/2 102 1/2 102 1/2 102 1/2
Canada Southern....	63 1/4 63 1/4 63 1/4 63 1/4 65
1st mortgage guar....	93 1/4 93 1/4 93 1/4 93
Central of N. Jersey....	79 1/4 78 1/2 79 1/4 79 1/4 79 1/4
1st mort. 1890....	78, consol. ass....
78, convertible ass....	111 1/4 111 1/4 111 1/4 111 1/4
78, Income....	107 107 107 107
Adjustment....	1st mortgage....
Central Pacific....	94 94 93 1/2 94 1/2 94 1/2 94 1/2
6s, gold....	116
1st M. (San Joaq)....	1st mortgage....
1st M. (Cal. & Or.)....	106 1/2 106 1/2
Land grant 6s....	1st mortgage....
Chesapeake & Ohio....	25 25 25 24 1/2
1st pref....	39 1/2 38 1/2 38 1/2 38
2d pref....	27 1/2 27 1/2
1st mort. series B....	85 85 1/2 86
Chicago and Alton....	145 144 1/2 144 1/2 145 145 145 1/2
Preferred....	1st mortgage....
Sinking Fund....	114
Chi., Bur. & Quincy....	139 138 1/2 137 1/2 137 1/2 137 1/2 137 1/2
78, Consol. 1903....	128 1/2
Chi., Mill. & St. Paul....	123 1/4 123 1/4 123 1/4 124 1/4 124 1/4 123 1/4
Preferred....	137 1/4 137 1/4 137 1/4 138 1/4 138 1/4 138 1/4
1st mortgage, 8s....	124
2d mort. 7 3/10s....	124
78, gold....	124
1st M. (La. C. div.)....	122
1st M. (I. & M. div.)....	121
1st M. (I. & D. ext.)....	121
1st M. (H. & D. div.)....	118
1st M. (C. & M. div.)....	124
Consolidated S. F....	124 1/2
Chi. & Northwestern....	143 1/2 144 1/2 144 1/2 148 1/2 148 1/2 149
Preferred....	165 166 165 173 1/2 170 1/2 175
1st mortgage....	102 1/2
Sinking Fund 6s....	131
Consolidated 78....	125
Consol. Gold bo'ds....	125 125 125 124 1/2
Do. reg....	125
Chi., R. I. & Pac....	138 1/4 139 139 138 1/4 139 1/4 138 1/4
6s, 1917, c....	138 1/4
Clev., Col., Clin. & Ind....	87 1/2
1st mortgage....	123 1/2
Clev. & Pittsburg gr....	139
78, Consolidated....	128 1/2
4th mortgage....	128 1/2
Col., Chi., & Ind. Cent....	13 1/2 14 1/2 13 1/2 14 1/2
1st mortgage....	124
2d mortgage....	124
Del. & Hud Canal....	117 1/2 117 1/2 117 1/2 118 1/2 118 1/2
Reg. 78, 1891....	116
Reg. 78, 1894....	106
78, 1894....	118 1/2
Del. Lack. & Western....	143 1/2 143 1/2 143 1/2 146 1/2 147 1/2 148 1/2
2d mortgage 78....	105
Consol. 1907....	103 1/2
Eric Railroad....	1st mortgage....
2d mort. 5s, ext....	105
3d mortgage....	109
4th mort. 5s, ext....	109
5th mortgage....	129 1/4
78, Consol. gold....	129 1/4
Great West. 1st mort....	105
2d mortgage....	103 1/2
Hannibal & St. Jo....	Preferred 95 1/2 95 94 1/2 96 96 95
8s, Convertible....	95 1/2 95 94 1/2 96 96 95
Houston & Tex. Can....	1st mortgage....
2d mortgage....	112 1/2
Illinois Central....	141 1/2 141 1/2 138 1/2 138 1/2 137 1/2
LakeShore & Mich So....	115 1/2 115 1/2 115 1/2 115 1/2 115 1/2
Consol. 78....	125
Consol. 78, reg....	125
ad Consolidated....	125
Leh. & W. B. con ass....	125
Long Dock bonds....	125
Louisville & Nash....	74 1/2 74 1/2 75 1/2 76 75 1/2 75 1/2
78, Consolidated....	118 118
Manhattan....	55 57 56 55 56 56 1/2
1st pref....	89 1/2
Met. Elevated....	83 85 83 83 1/2
1st mortgage....	99 98 1/2 98 1/2 99 1/2 99 1/2
Michigan Central....	100 1/2 100 1/2 100 1/2 100 1/2 99 1/2
78, 1905....	124 1/2 125
Morris & Essex....	127 126 1/2 127 1/2 127 1/2
1st mortgage....	127 127 1/2

ad mortgage....	112 1/2
78 of 1871....	124
78, Convertible....	124 1/2
78, Consolidated....	124 1/2
N.Y. Can. & Hud. R....	136 1/2 137 1/2 136 1/2 136 1/2 137 1/2
6s, S. F. 1883....	108 1/2
6s, S. F., 1887....	133
1st mortgage....	132
1st mortgage, reg....	132
N. Y. Elevated....	1st mortgage....
1st mortgage....	115
N. Y. & Harlem....	205
Preferred....	1st mortgage....
1st mortgage, reg....	131
N. Y., Lake Erie & W....	40 1/2 40 1/2 39 1/2 40 1/2 40 1/2 39 1/2
Preferred....	80 1/2 80 1/2 80 1/2 80 1/2 80 1/2
2d Consolidated....	98
New ad 5s fund....	97 1/2
2d mortgage, reg....	94
N.Y., N. Hav'n & Hart....	1st mort. 1st mort.
North Mo. 1st mort....	Northern Pacific....
Preferred....	51 1/2 51 1/2 51 1/2 51 1/2 51 1/2
Ohio & Mississippi....	94 1/2 95 1/2 94 1/2 95 1/2 95 1/2
Preferred....	39 1/2 38 1/2 39 39 1/2
2d mortgage....	37 1/2
Consolidated 78....	1st mortgage....
Consol. S. Fund....	117
Pacific Mail S. S. Co....	46 1/2 45 1/2 45 1/2 45 1/2 45 1/2
Pacific R. R. of Mo....	1st mortgage....
1st mortgage....	105 1/2
2d mortgage....	105 1/2
Panama....	1st mortgage....
Phila. & Reading....	59 1/2 59 58 1/2 60 1/2 61 1/2 63
Pitts., Ft. W. & Chi. gtd....	134 136
1st mortgage....	134
2d mortgage....	136
3d mortgage....	136
Pullman Palace Car....	128 1/2
129 132 1/2 134	1st mortgage....
Quicksall'r Min'g Co....	10
Preferred....	1st mortgage....
St. Louis & San Fran....	42 1/2 42 41 1/2 42 42
Preferred....	60 1/2 60 60 1/2 61 1/2 61
1st Preferred....	98 1/2 98 1/2
St. L., Alt'n & T. H....	41 1/2 40 40 1/2 42
Preferred....	87 89 87
1st mortgage....	122
2d mort. pref....	122
Income bonds....	122
St. L., Iron Mt. & S....	1st mortgage....
2d mortgage....	122
Toledo and Wabash....	1st mortgage....
2d mortgage....	122
78, Consolidated....	1st mortgage....
St. Louis Division....	104
Union Pacific....	118 117 1/2 117 1/2 118 117 1/2 116 1/2
1st mortgage....	116
Land Grant 78....	114 1/2
Sinking Fund 88....	123
United States Ex....	75
Wabash, St. L. & Pac....	37 1/2 37 1/2 36 1/2 38 37 1/2 37 1/2
Preferred....	66 1/2 66 1/2 66 67 66 66
New mort. 78....	66
Wells-Fargo Ex....	130 1/2
Western Pacific b'ds....	131 1/2
Western Union Tel....	89 1/2 89 1/2 88 1/2 89 1/2 89 1/2
75, S.F. conv., 1900....	118
FEDERAL STOCKS:—	
U. S. 45, 1907, reg....	120
U. S. 45, 1907, coup....	119 1/2 119 1/2 119 1/2 119 1/2
U. S. 4 1/2, 1891, reg....	113 1/2
U. S. 4 1/2, 1891, coup....	113 1/2
U. S. 50, com'd at 3 1/2....	101 1/2
U. S. 65 cont'd at 3 1/2....	101 1/2
Dt. of Col. 3-65s, reg....	121 1/2
Dt. of Col. 3-65s, coup....	121 1/2
Little Schuylkill....	57 57
Minehill & Sch. Hav'n....	1st mort. 6s, coup....
North Pennsylvania....	63 1/2 63 1/2 63 1/2 63 1/2 63 1/2
1st mortgage 6s....	63 1/2 63 1/2 63 1/2 63 1/2 63 1/2
2d mortgage 78....	63 1/2 63 1/2 63 1/2 63 1/2 63 1/2
Genl. mtg. 78, coup....	63 1/2 63 1/2 63 1/2 63 1/2 63 1/2
Genl. mtg. 78, reg....	63 1/2 63 1/2 63 1/2 63 1/2 63 1/2
Northern Central....	49 1/2 49 1/2 49 1/2
5s....	49 1/2 49 1/2 49 1/2
Northern Pacific....	51 1/2 51 1/2 51 1/2 51 1/2 51 1/2
Preferred....	93 1/2 94 1/2 95 1/2 94 1/2 95 1/2
Pennsylvania R. R....	62 1/2 62 1/2 62 1/2 62 1/2 62 1/2
1st mortgage....	62 1/2 62 1/2 62 1/2 62 1/2 62 1/2
Ten'l. mort....	62 1/2 62 1/2 62 1/2 62 1/2 62 1/2
Gen'l. mort. reg....	62 1/2 62 1/2 62 1/2 62 1/2 62 1/2
Consol. mort. 6s....	62 1/2 62 1/2 62 1/2 62 1/2 62 1/2
Consol. mort. reg....	62 1/2 62 1/2 62 1/2 62 1/2 62 1/2
Pa. State 5s, new....	117
do 45, 1912....	117
do 3 1/2, 1912....	117
Phila. & Reading....	30 1/2 29 1/2 29 1/2 29 1/2 30
1st mortgage 6s....	30 1/2 29 1/2 29 1/2 29 1/2 30
78 of 1893....	124
78, new convert....	74 1/2 74 1/2 75 75 75 75
Consol. mort. 78....	124 1/2
Consol. mort. reg....	74 1/2 74 1/2 75 75 75 75
Gen'l. mort. 6s....	95 1/2 95 95
Def. Income bonds....	29 1/2
Philadelphia & Erie....	17 1/2
1st mortgage 5s....	104 1/2
2d mortgage 78....	104 1/2
Pitts., Clin. & St. L. 78....	
Pitts., Tit. & Buff. 78....	
Schuylkill Navig'n....	Preferred....
6s, 1895....	13 1/2 13 1/2
6s, 1907....	91 1/2 90 90
United Co. of N. J....	183 1/2 188 1/2 188 1/2
Hestonville, (Horse)....	
Chestnut & Wal. (do)....	

Baltimore Stock Exchange.

Closing Prices for the Week Ending Aug. 15.					
	W.9.	Th.10.	F.11.	Sat.12.	M.14.
Baltimore & Ohio.	194 1/2	194 1/2	107 1/2	107 1/2	107 1/2
6s, 1885.	107 1/2	107 1/2	107 1/2	107 1/2	107 1/2
Central Ohio (\$50).	110 1/2	111	111	111	111
1st mortgage.	110 1/2	111	111	111	111
Marietta & Cincin'ti	110 1/2	111	111	111	111
1st mortgage, 7s.	110 1/2	111	111	111	111
2d mortgage, 7s.	110 1/2	111	111	111	111
3d mortgage, 8s.	110 1/2	111	111	111	111
Northern Cen. (\$50)	50	50	49 1/2	49 1/2	49 1/2
2d mort., 6s 1885.	49 1/2	49 1/2	49 1/2	49 1/2	49 1/2
3d mort., 6s, 1900.	116 1/2	116 1/2	116 1/2	116 1/2	116 1/2
6s, 1900, gold.	116 1/2	116 1/2	116 1/2	116 1/2	116 1/2
6s, 1904, gold.	116 1/2	116 1/2	116 1/2	116 1/2	116 1/2
Pitts. & Connells'v.	78	78	78	78	78
Virginia 6s, Consol.	59 1/2	59 1/2	58 1/2	58 1/2	58 1/2
Consol. coupons.	58	59 1/2	58 1/2	58 1/2	58 1/2
10 40 bonds.	42 1/2	42 1/2	42 1/2	42 1/2	42 1/2
Def' Certificates.	42 1/2	42 1/2	42 1/2	42 1/2	42 1/2
Western Maryland.	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2
1st M., end. by Balt	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2
2d M., do	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2
3d M., do	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2
1st M., unendors'd	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2
2d M., end. WashCo	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2
3d M., preferred.	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2
City Passenger R.R.	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2

London Stock Exchange.

Closing Prices	
July 28.	Aug. 4.
Baltimore & Ohio 5s, 1927.	106 108
Central of N. J., \$100 shares.	93 98
Do. consol. mort.	111 113
Do. Income Bonds.	90 95
Central Pacific of Cal., \$100 shs.	98 99 1/2
Do. 1st mort. 6s, 1895-98.	118 120
Det. G'd Haven & Mil. Equip. bds.	118 118
Do. Con. M. spc. till'83 aft'6p. cr. 13	115 115
Illinois Central \$100 shares.	140 142
Do. S. F. 5s, 1903.	106 108
Lehigh Valley Cons. mortgage.	115 119
Louisville & Nashville mort. 6s.	98 100
Do. capital stock \$100 shares.	76 78
N. Y. Cent. & Hud. R. mt. bds.	132 136
Do. \$100 shares.	139 140
Do. mort. bonds (stg.).	121 123
N.Y., Lake Erie & West., \$100 shs 42	42 1/2 42 1/2
Do. 6 p. c. pref. \$100 shares.	82 84
Do. 1st Con. Mort. bds. (Erie).	130 134
Do. do. Funded Coupon bds.	129 131
Do. ad Consol. Mort. bonds.	99 100
Do. do. Funded Coupon bds.	96 98
N.Y., Pa. & Ohio 1st mort. bonds.	49 50
Do. Prior Lien bds (sterling).	108 103
Pennsylvania, \$50 shares.	63 1/2 64
General Mortgage.	123 125
Phil. and Erie Gen. mort. 6s, 1920-117	119 117
Philadelphia & Reading \$50 shs 3 1/4	32 1/4 31 1/4
General Consol Mortgage.	116 118
Do. Improvement Mortgage.	106 103
Do. Gen. Mtg. 7 1/2 ex-def'd coup.	97 98
St. L. Bridge 1st mort. gold b'd.	125 127
Do. 1st pref. stock.	97 100
S. P. Co. of Cal., 1st mort. 6s, 1905-6-103	110 108
Union Pacific 1st mtg. 6s, 1890-9-117	122 118
Wabash, St. L. & P. \$100 shs.	39 40
Do. \$100 pref. shares.	70 72
Do. gen. mort. bonds.	89 91

AMERICAN RAILROAD JOURNAL.

Financial and Commercial Review.

THURSDAY EVENING, August 17, 1881.

The rate for call loans on stocks in the morning hours was 4@5 per cent, in the afternoon it was 4 1/2 per cent, and in the last hour 3@4 per cent.

The posted rate for prime bankers' demand bills was 4.90, and for 60-day sterling 4.86. The actual rates for prime bankers' sterling were 4.85@4 1/2 and 4.88@4 1/2, with cable transfers 4.89@4 1/2@4.90%, and for prime commercial bills 4.83@4 1/2@4 1/2. The actual rates for Continental bills are as follows; Francs, 5.19@5.18% and 5.15; Marks, 94% and 95%, and Guilders, 40@1-16 and 40@5-16.

The Solicitor of the United States Treasury at Washington has given an opinion that freight on imported goods consigned to an inland city cannot be collected at the port of arrival, and can only be collected at the point of destination. He holds that the collector at the port of arrival has no right to demand payment of freight charges.

The amount of 3 1/2 per cent bonds outstanding on the 1st of August was about \$417,000,000, and it was estimated that about one-half of them would be exchanged for the new 3 per cents. That this estimate was not excessive is evidenced by the fact that \$150,000,000 of them have already been surrendered by the National Banks

alone, and there is every reason to believe that the amount received from these banks will aggregate nearly \$180,000,000.

Paducah, Ky., has voted \$100,000 in aid of the Shawneetown Railroad, which will extend from the latter place to a point opposite Paducah, where a transfer landing will be built. As the intention is to build a road parallel with the river as far as it goes, naturally it should be extended to Evansville one way and to Cairo the other. At each of these points it would obtain several important connections, and thus be made a paying road.

It was announced in Ottawa that \$8,500,000 of the \$100,000,000 of Canadian Pacific Railway bonds have been taken up. The Duke of Manchester's Company took \$5,000,000, \$360,000 were taken up in Toronto, and the remaining \$3,000,000 disposed of in Canada.

An opinion of very great interest to managers of trust funds has just been handed down by the Supreme Court of Connecticut, in the case of Brinley *et al.*, Trustees, vs. Grow *et al.* The trustees held a large lot of stock of an insurance company as part of a fund. The capital of the insurance company was increased, and the stockholders had the privilege of taking the new stock at par, and, as the stock was paying heavy dividends, this privilege commanded a premium. The trustees sold part of their privileges and received in payment an amount sufficient to purchase 47 shares of the new stock. The heirs claimed that this was an increase in the income of the trust fund and should be transferred to them. The court holds that it is part of the principal of the fund, not having been set off by the company in the nature of a dividend or a division of profits or accumulated surplus.

For several months past there has been a decided and steady increase in the fund held by the United States Treasury for the redemption of the notes of National Banks that have either failed, passed into liquidation, or are reducing circulation. Considerable alarm has consequently been created in financial circles, and numerous inquiries have been made at the Department to ascertain the extent to which contraction has taken place, and the cause therefor. In order that the public may be guarded against misapprehension of the facts, and protected against imposition, we give place to the following figures and facts, which have been obtained from the records of the Treasurer at Washington:

On the 1st of January, 1881, the redemption fund amounted to amounted to \$20,852,000, and on the 1st of February of that year the amount was \$20,697,000. It was during February, 1881, that Congress passed the three per cent refunding bill, some sections of which were obnoxious to the banks, and in consequence many of them surrendered their circulating notes, for the purpose of withdrawing the five and six per cent bonds deposited with the United States Treasurer as security for those notes. The amount of United States notes thus surrendered, from the middle of February to April 1, was over \$17,000,000, the aggregate of the redemption fund on the date last named being nearly \$38,000,000. The veto of the obnoxious bill by the President, and the adjournment of Congress on the 4th of March, arrested the panic among the banks, and some of them at once proceeding to take back the circulating notes surrendered.

The books of the Treasurer show a steady decrease in the monthly aggregate of this redemption fund down to April 1, 1882, when the amount held was \$29,103,929, a decrease of \$8,600,000, as compared with April 1, 1881, at which date the fund reached the highest point. Since the 1st day of April last, however, there has been a steady increase each month. For April the increase was \$900,000; May, \$2,500,000; June, \$2,100,000; July, \$1,000,000, making an aggregate increase for the four months of \$8,500,000.

No reason can be assigned at the Treasury Department for this increase in the redemption fund, so far as the financial and commercial business of the country is concerned, and the fact that inquiries are made from financial centers as to the cause of the supposed contraction of the currency is evidence that, whatever the cause, it is not produced by any known changes in the ordinary channels of business. An examination of the figures shows that the redemption fund on August 1, 1882, was only \$100,000 short of its highest point, on April 1, 1881, when it was \$37,707,937; and inquiry into the cause for the increase shows that it is attributable to legislation by Congress, as it was the cause for decrease fifteen months ago.

Prior to the passage of the act to enable National banks to extend their corporate existence, those banking associations whose charters were about expiring were unable to await the slow and uncertain action of Congress, and, in order to secure themselves against any contingency, surrendered their circulating notes. On the other hand, the delay of Congress in passing the Enabling act prevented the organization of new banking associations, thus furnishing two sources for increasing the redemption fund. Provision having been made for the extension of old banking associations and the organization of new ones, it is believed this fund will at once begin to decline in amount.

But while it is true that, compared with August 1, 1881, there is now in circulation \$5,000,000 less of United States notes, it must not be assumed that the currency has been contracted to that amount, because this decrease in United States notes has been more than doubly supplied by the issue of silver certificates. On August 1, 1881, the amount of silver certificates outstanding was \$40,802,892, and on August 1, 1882, the amount was \$54,757,720, an increase of \$13,954,828 during the twelve months.

At the annual meeting of the stockholders of the Cincinnati, Hamilton and Dayton Railroad Company, held in Cincinnati on the 16th inst., it was voted to increase the capital stock of the company \$1,000,000, by the issue of that amount of preferred stock in shares of \$100 each, the proceeds of which will be used in extending the double track, and improving the equipment and terminal facilities—it being the determination of President Jewett to put the road in first-class condition. It is through this road and the New York, Pennsylvania and Ohio, that the New York, Lake Erie and Western has its Cincinnati connection.

The governors of the New York Stock Exchange have admitted to dealings at the Board the following securities: Chicago, Milwaukee and St. Paul Railway Company—An additional \$2,400,000 of the Chicago and Pacific Western division first mortgage 5 per cent gold bonds, issued on twenty-seven miles of additional completed road, and \$1,500,160 for additional rolling-stock. Denver and Rio Grande Railway Company—An additional \$1,050,000 of consolidated 7 per cent bonds, issued at the rate of \$15,000 per mile on seventy miles of additional road. St. Paul, Minneapolis and Manitoba Railroad Company, an additional \$720,000 first mortgage 6 per cent gold bonds issued upon an additional completed and equipped sixty miles of road.

At the annual meeting of the St. Johnsbury and Lake Champlain Railroad Company, held at St. Johnsbury, Vt., on the 9th inst., the report of the directors was presented, from which we learn that the income from freight department was \$163,329.77; from passenger department, \$64,114.16; miscellaneous, \$12,718.56—total income, \$242,662.48; add balance of earnings from last year after the payment of interest, \$32,290.34, making a total of \$274,952.83; from which deduct operating expenses for the year, \$19,496.91, leaving balance of income \$255,455.92; less the interest and losses paid during the year, \$46,108.71, making the balance of the income June 30, 1882, \$35,347.21. The company voted to lease the Canada Junction Railroad jointly with the Montreal, Portland and Boston Railway Company, which thus assumes all liability. The Canada Junction Railroad is eleven miles long, and is now in process of construction. It connects at Sheldon Junction with the St. Johnsbury and Lake Champlain Railroad, and at its other terminus with the Montreal, Portland and Boston Railroad, which is already operated as a part of the southeastern system of roads. It will be valuable as affording the southeastern system a connection with Montreal independent of the Passumpsic, and to the St. Johnsbury and Lake Champlain Railroad as a feeder from connecting lines. The Canada Junction Railroad is a portion of the original plan for connection with Montreal when the Portland and Odgensburg Railroad was first projected.

The first and second mortgages on the New York and Sea Beach Railroad, which runs from Bay Ridge, L. I., to Coney Island, have been foreclosed. The first mortgage on the road was for \$218,549.75, and the second mortgage for \$215,899.91. The trustees for the mortgages, James W. Smith and George S. Bowdoin, being unable to collect any interest, brought suit in the Kings County Supreme Court to foreclose the mortgages. The suit was successful, and Judge Barnard has just signed the order. Joseph Bartlett has been appointed trustee

to sell the property. The date of the sale is not yet fixed. The road has been operated for the past two years but it has failed to pay at any time.

The following quotation of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

New York.—Am. Dock and Imp., 58, 94½; Atlantic and Pacific 1st, 98½; Atchison, Colorado and Pacific 1st, 92; Boston and New York Air Line pref., 76%; Boston, Hartford and Erie 1st, 55; Chicago and Northwestern S. F., 58, 103%; Chicago, St. Paul, Minneapolis and Omaha, 54½; do. pref., 112½; do. consol., 105½; Chicago, St. Louis and New Orleans, 79; do. 58, 104%; Cincinnati, Sandusky and Cleveland, 55; Chesapeake and Ohio cur. 68, 54; do. 1st, Series A, 108½; do. 68, 1911, 102; Columbus, Chicago and Indiana Central inc., 52; Chicago, Milwaukee and St. Paul, Southern Minn. div. 1st, 108½; do. Chicago and Pacific div. 108; do. Chicago and Pacific West. div. 1st, 93%; Cleveland, Painsville and Ashtabula 1st, 109; Cleveland and Toledo S. F., 107½; Central Iowa 1st, 111½; Cairo and Fulton 1st, 108½; Cincinnati, Lafayette and Chicago 1st, 110; Chicago, St. Paul and Minneapolis 1st, 112; Chicago, Burlington and Quincy, Denver div. 48, 88; Denver and Rio Grande, 61½; do. 1st, 114½; do. consol., 99½; Dubuque and Sioux City, 95; East Tennessee, Virginia and Georgia, 11%; do. pref., 103%; do. income, 46%; Fort Worth and Denver 1st, 98%; Green Bay, Winona and St. Paul, 8½; do. inc., 56; do. 1st, 84; Gulf, Colorado and Santa Fe 1st, 108; Houston and Texas Central genl. mort., 99½; do. 1st, Waco and N. W. div. 112; Hannibal and St. Joseph 68, consol., 106½; Indiana, Bloomington and Western, 46½; do. inc., 59; do. 2d, 76½; do. Eastern div. 68, 95; International and Gt. Northern 1st, 105½; do. coup. 68, 87; Indianapolis, Decatur and Springfield 1st, 103%; Keokuk and Des Moines, 18; Kansas Pacific 1st consol., 104%; do. 68, Denver div. 58, 110½; do. 68, 186, 110; Louisville and Nashville genl. mort. 68, 95%; do. 2d, 102; Long Island, 58; do. con. 58, 97%; Lake Erie and Western, 41; do. inc. 57; do. 1st, 102; do. Sandusky div. inc., 49; Louisville, New Albany and Chicago, 72; do. 1st, 104; Lafayette, Bloomington and Muncie 1st, 101; Lehigh and Wilkesbarre inc., 85; Manhattan Beach, 26; Minn. and St. Louis, 34; do. pref., 68½; do. Iowa ext. 1st, 111½; Missouri, Kansas and Texas, 38%; do. consol. 78, 106½; do. ad. 68; Missouri Pacific, 106%; Memphis and Charleston, 62½; Milwaukee, Lake Shore and Western, 57½; do. 1st, 101½; do. inc., 81½; Mobile and Ohio, 23; do. 1st debent., 79; do. 1st mort., 108½; Michigan Central 58, 102; Milwaukee and Madison 1st, 112; New York, Chicago and St. Louis, 15%; do. pref., 33%; do. 1st, 93%; New York, Ontario and Western, 25%; Norfolk and Western pref., 56; do. genl. mort., 102; New York and New England, 53%; Nashville, Chattanooga and St. Louis, 64; do. 1st, 114½; New Orleans Pacific 1st, 91%; Northern Pacific 1st, 103½; Ohio Central, 17½; do. inc., 30; do. 1st, 93; Oregon Railway and Nav., 154; do. 1st, 107½; Oregon Transportation, 92%; Oregon Short Line 68, 103; Ohio Southern, 10; do. 1st, 85; do. inc., 30%; Peoria, Decatur and Evansville, 36½; Pennsylvania Company 4½%, 96%; Rome, Watertown and Ogdensburg 1st, 110; Rochester and Pittsburgh Railroad, 27%; do. 1st, 104%; do. inc., 43%; Richmond and Danville, 100%; do. debentures, 80; do. 1st, 100%; Richmond, Danville and West Point, 64½; Richmond and Alleghany, 23; do. 1st, 89; St. Louis and San Francisco 2d, Class A, 98; do. B, 91; do. C, 90%; St. Paul and Duluth, 34; pref., 89; St. Paul, Minneapolis and Manitoba, 144½; do. 1st, 108; South Carolina, 25; do. 1st, 101%; do. inc., 60; do. 2d, 90; St. Louis, Kansas City and Northern, R. E. 78, 108%; do. Omaha div. 1st, 112; Southern Pacific of California 1st, 106½; St. Paul and Sioux City 1st, 111; St. Louis, Iron Mountain and Southern 58, 82½; do. Cairo, Ark. and Texas 1st, 107½; Scioto Valley 1st, 95%; Texas and Pacific, 51%; do. inc. Land Grant, 68; do. Rio Grande div. 1st, 84%; Toledo, Peoria and Western 1st, 110; Toledo, Delphos and Burlington 1st, 83; Virginia Midland, 53; do. inc., 74; Wabash, St. Louis and Pacific, gen'l mort. 68, 84%; do. Chicago div. 1st, 85; Arkansas 78, L. R. and Fort Smith, 28; do. M. W. and R. R., 28; do. P. B. and N. O., 30; do. M. and L. R., 30; Alabama, Class A, 81; Missouri 68, 1896, 105%; do. 68, 1887, 107; North Carolina 48, consol., 82; Tennessee 68, 56; Virginia 68, old. 40; Colorado Coal and Iron, 46; do. 68, 87½; Maryland Coal, 20; New Central Coal, 17; American District Telegraph, 54; Ontario, 40; Standard, 11.

Boston.—Atlantic and Pacific blocks, 107½; do. inc., 29½; Atchison, Topeka and Santa Fe 58, 98; do. 1st, Dutch stamp, 121; Boston Land, 8%; Boston Water Power, 4½; Boston, Clinton, Fitchburg and New Bedford, 61; do. pref., 132½; Burlington and Missouri River in Neb. 68, non-exempt, 103%; Chicago, Burlington and Quincy 58, 102; do. 48, Denver ext., 85; Connotton Valley, 8%; do. pref., 10½; do. 68, 70; Cincinnati, Sandusky and Cleveland 78, 104%; California Southern, 22; do. 68, 83½; Connecticut and Passumpsic Rivers R. R., 93; Central of Iowa, 2d pref., 50; Flint and Pere Marquette pref., 95; Iowa Falls and Sioux City, 94; Louisiana and Missouri River R. R., 15; do. pref., 29; Little Rock and Fort Smith, 54; do. 78, 108; Kansas City, Fort Scott and Gulf, 84; do. pref., 125; Mexican Central, 28; do. 78, 85%; do. blocks No. 2, 123; Massachusetts Central 68, 41%; Marquette, Houghton and Ontonagon, 75; do. pref., 120; Milwaukee and Lake Shore pref., 50%; New York and New England 68, 105%; New Mexico and Southern Pacific 78, 114%; Oregon Short Line subs., 102½; do. 68, 103; Rutland pref., 25%; do. 68, 100; Summit Branch, 14; Sonora 78, 106%; Toledo, Cincinnati and St. Louis, 8%; do. 68, 69½; Toledo, Delphos and Burlington, Dayton div. inc., 20; do. Branch inc., 20; Wisconsin Central, 16%; do. pref., 30%; do. 78, 1st series, 77; do. 2d series, 47%; Allouez Mining Company, 2%; Atlantic, 15½; Brunswick Antimony, 12; Franklin, 15; Huron, 3%; Osceola, 34%; Pewabic, 10%; Silver Islet, 19%; Sullivan, 3.

Philadelphia.—American Steamship Co., 22; Cincinnati 7-30s, J. and J., 129½; Central Transp., 34; East Pennsylvania, 65; Nesquehoning Valley, 55%; Philadelphia, Wilmington and Baltimore 48, 95%; Philadelphia and Reading R. R. scrip, 100; Philadelphia City 68, 1903, 131; do. 1900, 130; do. 1892, 120; do. 1891, 118; Texas and Pacific, consol. mort. 68, 95%; Western Pennsylvania 68, Pittsburgh Branch, 108; West Jersey 1st, 120. The latest quotations are: City 68, 108@120; do. free of tax, 127@132; do. 48, new, 108@113; Pennsylvania State 58, new loan, 116½@117½; do. 48, old, 108@113; do. 48, new, 116@117; Philadelphia and Reading Railroad, 31½@31½; do. consol. mort. 78, reg. 124@126; do. gen'l mort. 68, coupon, 96@96; do. 78, 1893, 120@125; do. new conv., 75@76; United New Jersey R. R. and Canal, 188@189; Buffalo, Pittsburg and Western, 21½@21½; Pittsburgh, Titusville and Buffalo 78, 93@94; Camden and Amboy mort. 68, 1889, 113@113½; Pennsylvania R. R., 62½@62½; do. general mort. 68, coupon, 125@125½; do. reg., 124@125; do. consol. mort. 68, reg., 121@122; Little Schuylkill R. R., 57@57%; Schuylkill Navigation pref., 13@14; do. 68, 1882, 90@90%; Elmira and Williamsport pref., 58@60; do. 58, 100@101; Lehigh Coal and Navigation, 44@44%; do. 68, 1884, 103½@104; do. R. R. loan, 112@116; do. Gold Loan, 113@114; do. consol. 78, 116@117; Northern Pacific, 51½@51%; do. pref., 96@96%; North Pennsylvania, 63@64; do. 68, 106½@107½; do. 78, 120@123; do. 78, General mort. reg., 122@123; Philadelphia and Erie, 17@18; do. 78, 114@115; do. 58, 104½@105; Minehill, 61@62; Catawissa 24@24½; do. pref., 55@56; do. new pref., 54@54%; do. 78, 1900, 117@—; Lehigh Valley, —@63; do. 68, coupon, 122@124; do. reg., 122@124; do. 78, 135@136; do. consol. mort. 121@122; Fifth and Sixth streets (horse), 160@161; Second and Third, 110@112; Thirteenth and Fifteenth, 68@75; Spruce and Pine, 40@45; Green and Coates, 80@90; Chestnut and Walnut, 90@93; German-town, 70@71; Union, 109@110; West Philadelphia, 105@115; People's 15@16; Continental, 100@102.

Baltimore.—Atlanta and Charlotte Railroad, 76½; do. 1st, 100½; Baltimore City 68, 1890, 117; do. 68, 1916, 125½; do. 58, 1900, 118; do. 58, 1916, 125½; Canton Co. 68, 102%; Charlotte, Columbia and Augusta, 56; do. ad. 100%; Maryland Defense 68, 105%; Marietta and Cincinnati 1st Trust certificates, 128½; do. 2d do., 102%; do. 3d do., 57% Northern Central 58, series A, 98%; Ohio and Mississippi, Springfield div. 1st, 120½; Virginia Peeler coupons, 38; do. 10-40 coupons, 65%; Virginia Midland pref., 125; do. 5th mort., 97; do. inc., 73%; Wilmington, Columbia and Augusta, 109. The latest quotations are: Atlanta and Charlotte, 76½@77; do. 1st, 109@110; Baltimore and Ohio, 194@200; Baltimore City 68, 1886, 109@—; do. 68, 1890, 117@117½; do. 58, 1900, —@118½; do. 58, 1916, 125½@126; Canton Co. 68, 102@—; Columbia and Greenville 1st, 102½@103; Marietta and Cincinnati 1st, 128½@128½; do. 2d, 102½@102%; do. 3d, 57%@58; Northern Central, 49%@50%; do. 68,

1885, 106@—; do. 58, Series A, —@98½; do. B, 97@97½; North Carolina consol. 48, 79@81; Virginia and Tennessee ad., 101½@101½; Virginia Midland inc., 73½@75; Virginia consols, 58½@59½; do. 10-40s, 42½@43.

AMONG the large number of orders received by the Allen Paper Car Wheel Company this month are two from California—one to Messrs. Huntington, Hopkins & Co., supply agents for the Southern California Railroad; the other to Messrs. Carter Bros., extensive car manufacturers on the Pacific coast. And thus the paper car wheel goes rolling on into favor.

THE population of Russia has, according to the latest census, increased by 14½ millions within the last twelve years. It is now 75,067,788 for Russia in Europe, 7,219,077 for Poland, 2,028,021 for Finland, and 15,186,456 for Siberia, the Caucasus and Central Asia—making a general total of 100,038,348 as compared to 85,570,546 at the census of 1870. The population of Poland alone has increased within the last sixty-five years from 2,717,287 to 7,219,077.

THE New York, Lake Erie and Western Railroad Company is making ever effort to improve its equipment and add to the comfort of the traveling public. A change from soft to hard coal will soon take place, making cinders a rarity. Within the past few months 25 first-class passenger coaches have been added to the rolling-stock, twenty of which were built by the Pullmans and five by Jackson, Sharpe & Co. The road is also to have 7,000 new freight cars, 5,000 of which have been delivered.

It is reported that the recent decision of Judge Baxter in the United States Circuit Court against the Pennsylvania Company will be made the basis of suits affecting other trunk lines. The decision was a denial of the right of a railroad company to be discriminative in rates in favor of large shippers. People with excellent sources of information say that this decision is of more importance to railroad corporations than any since the famous granger decisions, and they anticipate important developments.

A PHILADELPHIA iron broker, being recently interviewed, is reported to have said that he did not believe there was an iron mill or furnace in Philadelphia that was not working to its fullest capacity. The orders upon which they are engaged are for the home market and for eastern demand. The strike in the West and Pittsburgh has thrown a large volume of business east of the Alleghenies. Some of it has come to Philadelphia, but the larger portion of it is absorbed by the mills within a radius of one hundred miles of this city. This increase in orders east of the Alleghenies has not advanced the schedule of prices, but has had a good moral effect upon the market, and the view of some of the most prominent manufacturers are that the position of the trade is more favorable than for some time past. The unprecedentedly large crops will require additional facilities of transportation, and indications at this time point to an activity in the trade that will certainly last until next spring.

RAILROAD EARNINGS—MONTHLY.

RAILROAD EARNINGS—MONTHLY.														
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
BURL., CEDAR RAP. & NORTHERN:														
1880.	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484	
1881.	167,750	124,510	148,551	184,680	105,630	205,912	174,351	209,112	221,801	221,748	203,880	232,812	2,259,037	
1882.	252,823	225,631	224,107	178,304	199,278	211,257	198,276	.....	.....	.....	.....	.....	.....
CENTRAL PACIFIC:														
1880.	1,200,614	1,070,487	1,373,438	1,356,716	1,778,488	1,724,950	1,840,067	1,973,438	1,964,997	1,120,229	2,199,466	1,905,221	20,508,112	
1881.	1,602,907	1,454,218	1,704,637	1,872,370	2,001,410	2,159,381	1,899,346	2,059,000	2,293,000	2,514,000	2,267,000	2,110,000	23,947,953	
1882.	1,876,000	1,702,000	1,987,000	2,052,000	2,353,000	2,299,000	2,020,000	.....	.....	.....	.....	.....	.....
CHESAPEAKE AND OHIO:														
1880.	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,303	211,820	240,795	218,009	2,674,308	
1881.	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	237,303	235,585	203,562	2,702,762	
1882.	210,455	209,708	208,981	267,454	255,939	260,753	306,831	.....	.....	.....	.....	.....	.....
CHICAGO AND ALTON:														
1880.	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,130	767,349	785,199	606,776	574,695	7,718,108	
1881.	487,890	461,641	529,915	518,100	548,556	635,860	670,205	771,466	768,897	750,359	680,133	635,397	7,553,988	
1882.	570,447	530,480	584,483	561,787	553,412	613,886	671,537	.....	.....	.....	.....	.....	.....
CHICAGO AND NORTHWESTERN:														
1880.	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,690,686	1,767,938	2,020,245	2,105,217	1,855,671	1,477,909	19,416,007	
1881.	1,240,667	963,208	1,178,795	1,474,612	1,870,006	2,306,640	1,938,031	2,315,164	2,292,670	2,341,097	2,019,037	1,855,476	21,849,209	
1882.	1,630,336	1,471,945	1,696,568	1,634,133	2,058,133	2,022,700	2,025,736	.....	.....	.....	.....	.....	.....
CHICAGO, BURLINGTON AND QUINCY:														
1880.	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,763	1,837,860	1,552,018	20,454,494	
1881.	1,307,948	1,034,321	1,418,149	1,574,371	1,079,455	2,083,803	1,888,558	2,173,945	2,262,681	2,031,001	1,816,133	1,905,490	21,324,150	
1882.	1,658,834	1,457,300	1,566,317	1,530,838	1,505,461	1,437,164	.....	.....	.....	.....	.....	.....	.....
CHICAGO, MILWAUKEE AND ST. PAUL:														
1880.	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,886,119	
1881.	990,847	862,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,078,000	1,645,000	1,569,000	1,569,000	1,555,000	17,025,462	
1882.	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,465,000	.....	.....	.....	.....	.....	.....	.....
CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:														
1880.	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097	
1881.	257,786	158,594	251,648	261,211	350,124	404,562	383,202	385,586	363,685	382,714	380,733	391,950	3,081,296	
1882.	307,498	315,100	405,779	356,558	406,400	363,109	331,480	.....	.....	.....	.....	.....	.....
CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:														
1880.	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,185	
1881.	182,523	171,511	191,005	183,710	191,066	192,299	177,167	229,858	219,977	212,606	194,805	192,623	2,269,916	
1882.	200,042	186,879	208,066	204,469	199,110	195,948	209,564	.....	.....	.....	.....	.....	.....
DENVER AND RIO GRANDE:														
1880.	124,759	126,622	160,883	164,882	193,025	205,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007	
1881.	307,476	317,681	389,493	433,111	514,767	584,230	548,284	606,193	620,643	656,819	634,417	626,812	6,206,812	
1882.	491,914	412,987	535,055	559,917	614,298	537,402	495,797	.....	.....	.....	.....	.....	.....
HANNIBAL AND ST. JOSEPH:														
1880.	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,391	
1881.	154,401	123,874	176,356	190,812	172,950	190,740	201,809	215,308	202,507	313,433	201,782	180,376	2,230,666	
1882.	138,284	154,717	168,798	148,913	154,917	155,030	184,347	.....	.....	.....	.....	.....	.....
ILLINOIS CENTRAL:														
1880.	595,312	613,806	613,008	535,732	665,120	681,726	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812	
1881.	631,281	524,499	557,789	602,493	673,299	803,887	720,004	808,407	828,847	815,238	737,218	703,475	8,580,397	
1882.	728,173	689,387	695,371	674,603	674,749	663,746	752,251	.....	.....	.....	.....	.....	.....
INDIANA, BLOOMINGTON AND WESTERN:														
1880.	80,498	89,600	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	96,621	104,619	1,233,079	
1881.	90,283	83,261	192,085	203,077	200,064	199,846	199,125	117,956	195,307	181,674	160,826	156,697	.....
1882.	195,824	175,755	206,235	205,934	182,554	186,133	206,072	.....	.....	.....	.....	.....	.....
LOUISVILLE AND NASHVILLE:														
1880.	674,455	575,035	612,593	563,883	655,014	976,229	772,537	827,088	931,910	1,000,326	953,086	949,184	9,491,346	
1881.	816,900	805,124	947,959	850,862	828,720	1,227,885	817,135	876,192	951,566	1,002,950	1,005,223	1,122,855	11,346,859	
1882.	950,065	960,036	1,073,745	950,007	946,435	1,187,385	1,038,385	.....	.....	.....	.....	.....	.....
MOBILE AND OHIO:														
1880.	250,116	204,094	168,301	140,091	129,249	121,855	131,621	140,593	184,246	264,714	251,368	287,373	2,373,621	
1881.	224,347	216,768	230,016	163,551	145,803	136,517	135,548	159,348	209,044	252,921	252,434	262,025	2,406,437	
1882.	161,433	158,154	152,651	145,272	137,645	132,572	130,398	.....	.....	.....	.....	.....	.....
NASHVILLE, CHATTANOOGA AND ST. LOUIS:														
1880.	205,633	191,154	169,457	155,466	158,839	144,155	151,594	169,326	167,473	178,266	182,087	175,996	2,049,448	
1881.	178,143	180,866	207,710	183,525	104,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,256	
1882.	156,994	159,661	161,005	154,155	137,645	119,074	.....	.....	.....	.....	.....	.....	.....
NEW YORK, LAKE ERIE AND WESTERN:														
1880.	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127	
1881.	1,206,381	1,252,218	1,644,958	1,643,151	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,899,910	1,799,338	1,726,788	19,149,361	
1882.	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	.....	.....	.....	.....
NORTHERN CENTRAL:														
1880.	334,494	330,860	415,335	386,130	329,788	419,193	450,298	453,982	464,093	512,91				

RAILROAD AND CANAL DIVIDEND STATEMENT.

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,500,000	semi-an	July '82 2	Little Miami.....50	4,637,300	q'arterly	June '82 2	Ware River*.....100	750,000	semi-an	July '82 3 1/2
Ashuelot.....100	210,000	q'arterly	Oct. '81 3 1/2	Little Rock & Ft. S.....100	4,096,135	.....	July '81 10	Warren (N. J.).....100	1,800,000	semi-an	Apr. '82 3 1/2
Atch., Top. and S. Fe.....100	54,000,000	q'arterly	Aug. '82 1 1/2	Little Schuylkill*.....50	2,646,100	semi-an	July '82 3 1/2	Warwick Valley.....100	340,000	semi-an	July '82 2 1/2
Atlanta and W. Point.....100	1,232,200	semi-an	Jan. '82 6	Louisville & Nashv.....100	19,130,913	semi-an	Feb. '82 3	Westchester & Phil. pref.....100	821,300	semi-an	July '80 2
Atlantic and St. Law*...100	5,840,000	semi-an	Mar. '82 3	Lowell & Andover.....100	500,000	semi-an	Jan. '82 3	West Jersey.....100	1,359,750	semi-an	Apr. '83 3 1/2
Augusta and Savan*...100	1,022,900	semi-an	June '82 3 1/2	Lykens Valley.....100	600,000	q'arterly	Oct. '82 2 1/2	Wilmington & Wld*...100	1,450,200	semi-an	July '82 3
Avon, Genesee & Mt. M*...100	225,000	semi-an	July '82 3	Manchester & Law.....100	1,000,000	semi-an	May '82 5	Wl., Col., & Aug.....100	980,000	semi-an	July '82 3
Baltimore and Ohio.....100	14,792,566	semi-an	May '82 5	Manhattan.....100	13,000,000	.....	.....	Winchester & Poto*...100	180,000	semi-an	July '82 3
" " pref.100	5,000,000	semi-an	July '82 3	" " 1st pref.100	6,500,000	q'arterly	July '82 1 1/2	Winchester & Strasb*...100	74,700	semi-an	July '82 3
Washington Br.....100	1,650,000	semi-an	Apl. '82 5	" " 2d pref.100	6,500,000	q'arterly	July '82 1 1/2	Worcester & Nashua.....75	1,789,800	semi-an	July '82 1 1/2
Berkshire*.....100	600,000	q'arterly	Apl. '82 1 1/2	Marietta & Cincinnati.....50	1,286,350	.....	.....	HORSE-POWER R. R.	.....	.....	.....
Boston and Albany.....100	20,000,000	q'arterly	June '82 1	" " 1st pref.50	8,105,600	semi-an	Sep. '66 38	Albany City.....100	200,000	annual	.... '80 5 1/2
Bos. & N. Y. Airline pf.100	2,795,227	q'arterly	June '82 1	" " 2d pref.50	4,440,000	semi-an	Sep. '66 38	Baltimore City.....25	1,000,000	semi-an	July '82 3
Bos., Cl., F. & N. B. pref.100	1,750,100	.....	Apl. '82 3 1/2	Marq. Hout. & Ont. pf.100	2,359,026	.....	Aug. '82 4	Balt. Cat. & El. Mills.....100	.....	semi-an	July '82 2
Bos., Cone. & Mont. pf*100	800,000	semi-an	May '82 3	Massawippi*.....100	2,450,000	semi-an	Aug. '82 3	Bleeker St. & Ful. F'y.100	900,000	semi-an	July '81 3 1/2
Boston and Lowell.....100	3,940,000	semi-an	July '82 2	Michigan Central.....100	18,738,204	q'arterly	Aug. '81 1	Boston & Chelsea pref.50	110,000	semi-an	Apr. '82 3
Boston and Maine.....100	6,921,274	semi-an	May '82 4	Middlesex Central.....100	280,000	semi-an	Aug. '82 3	Broadway (Brooklyn)100	250,000	q'arterly	Oct. '81 3
Boston & Providence.....100	4,000,000	semi-an	May '82 4	Mill Creek & Minehill*.....50	323,000	semi-an	July '82 5	B'way & 7th Av. (N.Y.)100	2,100,000	q'arterly	Oct. '81 2
Attleborough Br.....100	131,700	semi-an	July '82 3	M. Hill & Schuyl. Hay*.....50	4,022,500	semi-an	July '82 3 1/2	B'klyn & Hunter's P.100	400,000	semi-an	Apr. '79 3
Bos., Revere B & Lynnco.....100	410,400	semi-an	July '82 3	Mobile & Montgomery100	3,022,517	semi-an	Feb. '82 3 1/2	Brooklyn City.....100	2,000,000	q'arterly	Dec. '81 3 1/2
Buffalo, N. Y. & Erie*...100	950,000	semi-an	June '82 3	Mont. & Wells River100	800,000	annual	Feb. '82 3 1/2	Bushwick (Brooklyn)100	309,000	semi-an	July '81 2 1/2
Camden & Atlantic.....100	3,777,400	q'arterly	Apl. '80 3 1/2	Morris and Essex.....50	15,000,000	semi-an	July '82 3 1/2	Cambridge.....100	98,000	q'arterly	Apl. '82 4 1/2
" " pref. 50	880,050	q'arterly	Apl. '80 3 1/2	Mt Carbon & Pt Carbon.....50	282,350	semi-an	July '82 6	Christoph r&Tenth St100	1,800,000	q'arterly	July '82 2
Camden & Burl. Co.100	381,925	semi-an	July '82 3	Middlesex Central.....100	500,000	semi-an	July '82 4	Citizens' (Phil.).....50	650,000	semi-an	Aug. '81 2 1/2
Canada Southern.....100	15,000,000	.....	Feb. '82 2	Mill Creek & Minehill*.....50	323,000	semi-an	July '82 5	Citizens' (Pbg.).....50	192,500	q'arterly	Jan. '82 2 1/2
Cape May & Millville*...100	547,000	semi-an	June '82 3	Missouri Pacific.....100	28,169,800	q'arterly	July '82 3	Coney Island & Bklyn100	200,000	annual	.... '80 14 1/2
" " pref. 20	2,200,000	semi-an	May '82 3	Mobile & Montgomery100	3,022,517	semi-an	Feb. '82 3 1/2	Continental (Phil.).....50	500,000	semi-an	Oct. '80 5
Cayuga and Susq*...50	580,110	semi-an	July '82 4 1/2	Mont. & Wells River100	800,000	annual	Feb. '82 3 1/2	Dock, E. B' way & Batio100	580,000	semi-an	July '82 6
Cedar Rapids & Mo. H*...100	6,850,000	q'arterly	Aug. '82 1 1/2	Morris and Essex.....50	15,000,000	semi-an	July '82 3 1/2	Eighth Av. (N. Y.)100	1,200,000	q'arterly	Nov. '81 4
" " pref. 100	760,600	semi-an	Aug. '82 3	Mt Carbon & Pt Carbon.....50	282,350	semi-an	July '82 6	42d St. & G. St. Ferry100	1,000,000	q'arterly	Oct. '81 3
Central of Georgia.....100	7,500,000	semi-an	June '82 4	N. Y. Cen. & Hud. R.100	1,305,800	semi-an	July '82 3 1/2	Frankf. & Southw (Ph)100	600,000	q'arterly	Jan. '82 6
Central of New Jersey100	18,563,200	q'arterly	July '82 2	Nash. & Decatur.....100	1,827,000	semi-an	June '82 3	Germanytown, (Ph.)100	572,800	q'arterly	July '82 2 1/2
Central Ohio*.....50	2,437,950	semi-an	July '82 3	Nash., Chat. & St. Louis.....25	6,670,325	semi-an	Apl. '82 1 1/2	Girard College (Ph.)100	500,000	semi-an	July '71 3
" " pref. 50	411,550	semi-an	July '82 3	Naugatuck.....100	2,000,000	semi-an	Jan. '82 5	Green & Coates St. (Ph)100	170,091	semi-an	July '81 2 1/2
Central Pacific.....100	59,275,500	semi-an	Aug. '82 3	Nequehoning Val*.....50	1,300,000	semi-an	Mar. '82 3	Heston, Mantua & F'm100	150,000	q'arterly	July '82 3
Chemung*.....100	380,000	q'arterly	July '81 1 1/2	N. Y. Castle & Beaver Val*.....50	600,000	semi-an	Oct. '81 -	Highland.....100	299,381	semi-an	Jan. '75 4
Cheahire preferred.....100	2,155,300	semi-an	July '82 1 1/2	Niag. Bridg. & Canand*100	1,000,000	semi-an	July '82 1 1/2	Lomb. & Southw (Ph)100	600,000	semi-an	July '82 4
Chicago and Alton.....100	11,181,741	semi-an	Sept. '82 4	North Carolina*.....100	3,000,000	semi-an	Sep. '81 3	Ninth Av. (N. Y.)100	195,000	semi-an	Oct. '78 7
" " pref. 100	2,245,400	semi-an	Sept. '82 4	" " pref. 100	1,000,000	semi-an	Sep. '81 3	Orange & Newark.....100	282,555	.....	....
Chi., Burl. & Quincy100	55,337,455	q'arterly	June '82 2	N. Y., Lake Erie & West.....100	77,083,900	.....	.....	Philadelph. City.....50	475,000	semi-an	July '82 4
Chi., Ia., Iowa & Nebra*...100	3,916,200	semi-an	July '82 2	" " pref. 100	8,156,825	semi-an	Jan. '82 6	Phila. and Darby.....20	200,000	semi-an	July '81 2 1/2
Chi., Mil. & St. Paul.....100	20,404,461	semi-an	Apl. '82 3 1/2	N. Y., N. H. & Hart.....100	15,500,000	q'arterly	Aug. '82 2 1/2	Phila. & Grey's Ferry.....50	308,000	semi-an	Jan. '82 6
Chi. & N. Western*...100	14,401,483	semi-an	Apl. '82 3 1/2	" " pref. 100	1,000,000	semi-an	May '81 4	Pbg. Alleg. & Manches.....50	300,000	q'arterly	Oct. '81 3
" " pref. 100	14,988,257	.....	.....	N. Eastern (S.C.) pref. 100	86,000	semi-an	May '81 4	Ridge Avenue (Ph.)100	420,000	semi-an	Oct. '81 11
Chi., R. I. & Pacific.....100	41,600,000	q'arterly	Aug. '82 1 1/2	" " pref. 100	1,000,000	semi-an	May '82 1 1/2	Second & Third St. (Ph)100	1,199,500	semi-an	July '81 2 1/2
Chi., R. I. & West Mich.....100	6,151,200	semi-an	Feb. '82 2	N. Penns. 50	15,000,000	q'arterly	June '82 3 1/2	17th & 19th sts (Ph)100	250,000	semi-an	July '81 3
Chi., St. P., M. & O. pref.100	10,390,000	q'arterly	July '82 1 1/2	Northern Central.....50	4,527,150	semi-an	Aug. '82 2 1/2	Sixth Avenue (N. Y.)100	750,000	semi-an	Oct. '81 5
C. Ind., St. L. & Chi.100	6,000,000	q'arterly	July '82 1 1/2	Northern N. Hampshire.....50	6,142,000	semi-an	July '82 3	Somerville (Boston)100	113,000	semi-an	May '82 3
Cin. Sand. & Clev. pf.50	429,037	semi-an	May '82 3	Northern N. Jersey*.....100	1,000,000	semi-an	July '82 0 2 1/2	South Boston.....100	600,000	semi-an	July '82 4
Clev. and Mahoning*.....50	3,759,200	semi-an	Nov. '81 3	Norwich & Worcester*100	2,604,000	semi-an	July '82 5	Third Avenue, N. Y.100	2,000,000	q'arterly	Nov. '81 5
Clev. and Pittsburg*.....50	12,444,336	q'arterly	Sept. '82 1 1/2	Oswego & Syracuse.....100	1,320,400	semi-an	Aug. '81 2 1/2	13th and 15th sts, Ph100	334,529	q'arterly	Jan. '82 4
Columbus & Xenia*.....50	1,788,200	q'arterly	June '82 2	Panama.....100	7,000,000	.....	.....	23d street, N. Y.100	600,000	semi-an	Aug. '81 4
Colum. & Hocking Val*100	2,500,000	semi-an	Aug. '81 2 1/2	Paterson & Hudson*100	4,030,000	semi-an	Mar. '75 3 1/2	Union, Boston.....100	374,300	semi-an	Jan. '82 4
Concord.....100	5,000,000	.....	.....	Paterson & Hudson*100	5,000,000	semi-an	July '82 3	Union, Phila.....50	1,005,000	semi-an	Jan. '82 7
Concord and Portia*...100	350,000	semi-an	July '82 3 1/2	" " pref. 100	2,400,000	semi-an	Jan. '82 3	West Philadelphia.....50	750,000	semi-an	July '77 10
Conn. & Passump. Riv100	2,244,400	semi-an	Aug. '82 3	Paterson & Ramapo.....50	248,000	semi-an	July '82 4	CANALS.	.....	.....	.....
Connecticut River.....100	2,100,000	semi-an	July '82 4	Pember. & Hightst*100	342,150	semi-an	Jan. '82 3	Chesapeake and Dela.....50	2,078,038	semi-an	June '75 2
Cumberland Valley.....50	1,292,950	q'arterly	July '82 2 1/2	Pennsylvania.....50	5,672,750	semi-an	May '82 1 1/2	Delaware Division.....50	1,633,350	semi-an	Aug. '82 1
" 1st pref 50	241,900	semi-an	Apl. '82 4	Pennsylvania Co.....100	2,000,000	q'arterly	June '82 1 1/2	Delaware and Hudson100	200,000	q'arterly	June '82 1 1/2
" 2d pref. 50	243,000	semi-an	Apl. '82 4	Pittsfield & N. Adams.....100	6,770,900	semi-an	July '82 2 1/2	Delaware & Raritan*100	5,847,400	q'arterly	July '82 2 1/2
Danbury*.....100	25,168,940	semi-an	July '82 3	Portl., Saco & Fortsm.....100	450,000	semi-an	July '82 3	Lehigh Coal and Nav100	11,204,250	semi-an	June '82 2
Del. & Bound Brook*100	1,652,000	q'arterly	Aug. '82 1 1/2	Providence & Worces.....100	2,000,000	semi-an	July '82 3	Monongahela Nav.....50	1,044,500	semi-an	July '82 3
Del., Lack. & Western*100	26,200,000	q'arterly	Jan. '82 1 1/2	Rhode Island & Mass.....100	100,000	semi-an	July '82 4	Morris, consolidated100	1,025,000	semi-an	Feb. '81 2
Denver & Rio Grande*100	29,160,000	.....	.....	Rhichmond & Danv.....100	5,250,000	q'arterly	Jan. '81 3	" preferred.....100	1,175,000	semi-an	Feb. '81 5
Den., South P. & Pac.100	3,500,000	.....	.....	Rhichmond & Petersbr.....100	3,866,000	semi-an	Jan. '81 3	Pennsylvania.....50	4,501,200	.....	....
Detroit, Lans. & Nor.100	1,825,600	semi-an	Aug. '80 2 1/2	Roch. & Genesee Val*100	1,009,300	semi-an	Jan. '81 3	" pref. 50	859,100	annual	Aug. '81 1 1/2
" " pref. 100	2,058,380	semi-an	Apl. '82 3 1/2	Rome, Waterf. & Ogd.100	5,253,900	semi-an	July '75 1 1/2	Pennsylv. Nav., com.*100	3,200,000	.....	....
Dubuque & Sioux*100	5,000,000	.....	.....	Summit Branch*.....50	4,010,150	semi-an	Sept. '82 1 1/2	" pref. 100	5,708,700	.....	....
East Pennsylvania*.....50	709,550	semi-an	July '82 3	Syr., Bingham & N. Y.100	2,500,000	semi-an	Feb. '81				

CORRESPONDENCE.

Examination of Locomotive Engineers.

[We pay no attention to communications unless the name and address of the writer are given, though the same will not be published if so requested. We assume no responsibility for statements made by correspondents, and we do not necessarily endorse ideas advanced by them. Under these conditions we think it of value to our readers to devote a liberal space to the free discussion by others—whose opinions may be at variance with our own—of subjects pertinent to our department of journalism.]

Editor AMERICAN RAILROAD JOURNAL:

HAVING taken the ground that a locomotive engineer should be found free not only from defects of sight and hearing, but also from organic disease of the heart, lungs and large blood vessels, I necessarily hold that the examination must be made by a medical man. For ordinary cases a general practitioner would be competent, with some special instruction from one who has had considerable experience. Cases would arise where the examiner might find himself doubtful or desirous of counsel, as frequently happens in the practice of medicine in its various branches. A specialist or expert would here be needed, and such a referee should be engaged to decide important or difficult cases. Every man found deficient by the ordinary examiner should have appeal to the expert, particularly with reference to defects of sight and hearing.

Wherever shops are located, or engines and train-men are shifted, there will be a local surgeon competent to make ordinary examinations. The surgeon-in-chief will be available for counsel, whenever occasion requires, and the specialist at the nearest large city will be the final referee.

The Pennsylvania Railroad carries out the details of examination by non-medical officers, with a specialist for general director and referee; but the examination there does not extend beyond tests of sight and hearing. If it be thought of any consequence that train-men should have sound hearts and lungs, and no liability to epileptic seizures, a well qualified medical practitioner must be the examiner. No well-organized railroad company will be much longer without a relief service, the medical officers of which will be available for whatever system of examinations may be adopted, with very little additional expense.

The advantages of examination of men for responsible railroad positions are manifold, but not altogether self-evident, and consequently the subject needs elucidation. They may be classified as (1) beneficial to the public, (2) to the companies, and (3) to the men themselves. Under the first head the case is too plain for demonstration, and this should be enough to settle the question; on the principle of "*salus populi suprema est lex*;" but it is not necessary to invoke "the higher law." Secondly, the advantage to the company lies in an additional safeguard against accidents, which destroy their property, and render them liable for damages always compensatory, and sometimes exemplary. In addition to direct losses follows the incidental one of loss of business from damaged reputation, which better managed companies know how to take advantage of. Thirdly, the advantage to employees is not so appar-

ent, but readily demonstrable. Take for instance locomotive engineers, as the most important class. I hold that conditions which tend to raise their qualifications will at the same time increase their respectability and their emoluments. This is exemplified in the marine engineers of the United States Navy. They undergo a course of education at the Naval Academy, after graduation are commissioned as officers, and are recognized as gentlemen practicing an honorable profession—not as men following a trade. But the first step in the course is to pass a physical examination of a searching character.

It is only a few centuries since the surgeons have been able to separate themselves from barbers, as members of the same calling. The elevation of the former was gradual, and was accomplished by voluntary pursuit of study and submission to tests of higher proficiency than that possessed by the latter. When we consider that the oldest medical school in this country dates back little more than a century, and that schools of civil engineering are more recent, we may reasonably expect that industrial schools for the practical teaching of the mechanic arts are neither utopian nor far in the future. Among the first of craftsmen requiring a technical education are railroad engineers, and people now living may in time find them, if not instructed in "the seven liberal arts and sciences," at least fairly proficient in chemistry and physics, and capable of building an engine as well as driving one.

Can any reasonable person question whether the situation of a skilled mechanic be preferable to that of a botch-workman, or that the same rule holds with the class as with the individual? In like manner, if every individual of a certain class is known to be free of important physical defects, the whole body is recognized as *elite*—becomes more respectable; their services become more valuable and command better pay. It is clear then that the true interest of the class would lead them to elevate their standard in every way, but especially where it would soonest be appreciated by the public; and that would be in the direction of the public safety.

The importance of this subject, I think, should commend it to the earnest attention of the Brotherhood of Locomotive Engineers, one of the largest and best organized guilds in the world. A movement for reform and elevation of standard within the organization itself would be praiseworthy and command the approval and encouragement of the public and of railroad companies; although a natural consequence would be an irresistible demand for better pay and more permanent engagements. On the other hand, it would be discreditable to resist any suitably presented proposition from others looking to higher efficiency and respectability, whether coming in the shape of legal enactments or corporate rules. It is true that legislation and regulations of employers, even when urged as salutary reforms, are apt to be regarded by those affected as useless oppression, and the instinct of self-preservation revolts. This is the explanation of the opposition of railroad engineers to any new tests of competency. Their reasoning is not sound,

but they will not be convinced in favor of abrupt reform which brings hardship to a few and even slight inconvenience to all. The law of nature, which achieves the elevation of the race by the "survival of the fittest," inflexibly eliminates the weak, who have to endure the extreme hardship of extinction; but we must not find fault with nature.

I am therefore clearly of opinion that it would be wise for the Brotherhood of Locomotive Engineers to aim at advancing their proficiency and gradually elevating their standard from that of a skilled craft to a profession. The first important step, to gain the confidence of the public and as a proof of the sincerity of their intentions, would be to give evidence of exemption from all physical defects which could impair their efficiency or imperil the lives put in their trust. This might be by an internal regulation, providing for an examination as the first step to admission to their ranks, or by inviting railroad companies to apply the test to those seeking employment. Either proposition would be honorable, would inspire confidence, and would lead to progressive elevation of the standard. A resolution adopted by that association in approval of physical examination of their members, and transfer of those found defective from the locomotive foot-board to some suitable duty, would probably meet a favorable response from railroad managers, and lead to satisfactory adjustment of what is regarded by those best informed on the subject as a great desideratum, albeit met by serious obstacles.

I purpose to continue by suggesting a plan for a technical school for the graduation of locomotive engineers, but must reserve it for a future communication.

S. S. H.

NEW ORLEANS, August 8, 1882.

Editor AMERICAN RAILROAD JOURNAL:

I LONG since noticed that the weak and defective part of a railroad track was the joint, and that the appliances used to make amends for it fell more or less short of the object in view.

After many devices of greater or less merit, the idea of the scarf joint made by rolling or stamping aside occurred to me; so that, retaining at least its full amount of metal and more than its original *vertical* strength, each rail should slide by the other so as to admit of bolting (with one or more bolts) one rail to the other and *covering* and *compensating* for the vacancy made by contraction.

I had a model of this joint made and submitted to several steel rail manufacturers, most of whom gave it as their judgment that it was "the strongest joint ever devised or that they had yet seen."

Eminent railroad engineers of high standing in the profession have given this joint this testimony: "With a slight modification in form this joint is unexceptionable."

It was not only *strength* I aimed at, but *smoothness*, durability and perfection, with simplicity, besides avoiding unnecessary clutter of wheels and cold hammering of rail and rolling gear—numerous breaks of both having been attributed to crystallization of metal by "cold hammering," in jumping the vacancies in the rails. My joint, I am sure, will correct all these evils to a large extent, simplify and cheapen construction and after-care, and contribute to the confidence, comfort and safety of travelers, diminish wear and tear, and lessen the burden and responsibility of railroad management.

This is the last thing that can be done for a joint itself, but it must have a bridging underneath the ties before it shall have attained its full perfection, according to the judgment of yours truly,

FRANK LIGHTFOOT.
MEDIA, PA., AUG. 15, 1882.

SAFETY RAILROAD SWITCHES,
WITH MAIN TRACKS UNBROKEN.

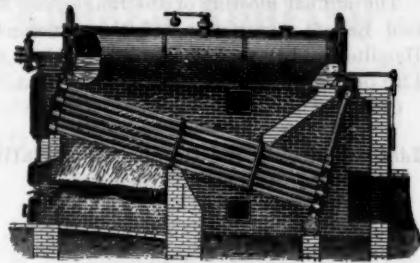
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And for a whole year the official records of the United States Post Office Department show the arrivals of Erie Railway trains in New York, on time, to be from 15 to 27 per cent ahead of competing lines.

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E. S. BOWEN, General Superintendent.

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[From our Special Correspondent.]

OUR CINCINNATI LETTER.

Work was begun on the 7th inst. on the Killbuck Valley road, from Wooster, Ohio, to the New York, Pennsylvania and Ohio road, near Burbank. The requisite amount of stock is nearly all subscribed, and it is proposed by the directors to push work and have the road-bed from Wooster to Burbank built before the commencement of the winter season. Bidders for construction are notified that plans and specifications of the road will be ready for inspection on and after the 20th inst. This new outlet will doubtless be of considerable advantage to the inhabitants of Wooster and vicinity.

Superintendent Fleming is laboring assiduously in placing the "block system" on the Cincinnati, New Orleans and Texas Pacific Railroad, and hopes to have it in operation at an early date, as its use will tend in a great degree towards lessening the dangers of collisions and other accidents.

Messrs. Grier and Roberts, trustees for the Pennsylvania Railroad bondholders in the Cleveland, Mount Vernon and Delaware Railroad, filed a cross-petition at Akron, Ohio, on the 8th inst., in the case of Fred'k W. Owel, *et al.* vs. the said Company, setting forth the manner of the recent sale of the road and their exceptions thereto. The cross-petition is somewhat bulky, covering over 200 pages.

The annual report of Railroad Commissioner Sabine will be published shortly, and it is said, will be of unusual value and interest. A leading feature therein will be the report of the commissioner appointed last year to inspect all railroads of Ohio. All the plates and cuts used in Van Nostrand's Magazine have been turned over to the commissioner for the illustration of the report, which will conduce greatly to the value of the work.

Just now, as the farmers refuse to sell their wheat at ruling prices, there is some stagnation in the grain-hauling business. One dollar per bushel is wanted by the agriculturists, being from 10 to 12 cents above the market quotations. A short time, however, will probably settle the question of price, after which the railroads will come in for their share of business in carrying the grain East.

The extension of the Chesapeake and Ohio Railroad from Newport News to Fortress Monroe is rapidly progressing, and it is stated that the track will, in a few days, be completed as far as Hampton, and that trains will probably be running by the 1st prox. Permission to extend the line down to the Point has not yet been secured, and the depot *pro tem.* will be about half a mile from the Hygeia Hotel.

At the recent meeting of the General Baggage Agents' Association at Cleveland, Ohio, the question was brought up as to the adoption of some feasible means of abolishing the pernicious practice of exchanging checks, and the committee appointed in the matter presented a form of receipt to be substituted therefor, and urgently recommend its adoption by all lines.

After a discussion upon the subject of the recently adopted system of charging storage on unclaimed baggage, the following resolution was adopted: Whereas, the practice of collecting storage charges has been introduced by

most of the lines represented in this association, with very satisfactory results, be it Resolved, That we recommend and urge its general adoption, as a means of intelligently determining the proper amount of baggage to be allowed free on a single passenger ticket.

It was then decided that each member should weigh baggage at one or more stations on his line for one month or more, and obtain a general average, to be reported at the next convention.

And the important resolution, as follows, was likewise adopted: Whereas, the practice of receiving baggage up to the last minute prior to the departure of each train necessitates undue hurry, which is productive of errors and confusion, and also opens the door for imposition on the part of commercial travelers, be it Resolved, that we unanimously urge upon our respective managements the advisability of notifying the public that the railroad company is resolved to hold baggage unless presented and checked a certain time prior to the departure of the train for which it is delivered, the length of this time to be determined by each individual road.

Upon motion a committee was appointed to investigate the advisability of reporting all railroad checks from the hands of all baggage, transfer and express companies, and report some feasible method of effecting their arrangement.

It was also decided that each member should consult the management of his own line as to the advisability of refusing to carry any single pieces of baggage weighing over 300 pounds, and the results to be reported for action to the next meeting, which will be held in February next, at the Grand Central Hotel in New York.

Messrs. Lampecht, Hayes & Co., of Cleveland, Ohio, were the successful bidders on the 11th inst., for Marion county 5 per cent road bonds, issued to the amount of \$110,700, at a premium of \$553.50; bonds and currency deliverable and exchangeable at Marion. Several bids were received, and the sale is considered a successful one, inasmuch as the bonds were for a short time only, *viz.* Six months to five years, in equal proportions.

The pool now existing between the Cincinnati, Hamilton and Indianapolis, and the Cincinnati, Indianapolis, St. Louis and Chicago roads expires on the 1st of September next by limitation. It is probable that the same will not be renewed on the former basis, inasmuch as the first-named road will not submit again to the old percentages.

The Wheeling and Lake Erie Railroad Company has nearly finished its track from the westend of the Maumee bridge as far as Cherry street, Toledo, via the old Miami and Erie canal bed, which will give valuable terminal facilities in the heart of that city.

Three of the new cars recently constructed for the Cincinnati, Hamilton and Dayton Railroad, by the Pullman Company, were on exhibition on the 13th inst. at the depot on 6th and Hoadly streets. Each car is provided with separate saloons and lavatories for ladies and gentlemen. No better constructed car can be found on any road in the country.

The president of the Toledo and Indianapo-

lis Air Line Railroad was in Bowling Green, Ohio, a few days since, paying up the road's indebtedness. The contractors have resumed work with a large force, and it is stated that the road will be graded and ironed from Toledo to Findlay within 60 days. If cars are running by January, it is probable that \$50,000 in subscriptions will be forthcoming from the towns along the road.

The Cincinnati Northern Railroad is to be newly equipped immediately with 60 box and stock cars, to carry 60,000 pounds apiece, 12 passenger coaches and 4 locomotives. The cost of such equipment will be about \$120,000.

The annual meeting of the Employers' Mutual Benefit Association, of the Cincinnati, Hamilton and Dayton lines will be held on the 12th prox., in this city. "A."

CINCINNATI, AUGUST 15, 1882.

List of Patents for Inventions Relating to Railway Interests.

[Reported expressly for the AM. RAILROAD JOURNAL.]

Bearing date of August 14, 1882.

- 262,643. Inclined Plane Railway: R. COLLINS, Chicago, Ill.
- 262,722. Safety Signal for Railway Trains: JNO. ARBUCKLE, Brooklyn, N. Y.
- 262,636. Automatic Car Brake: AUGUST J. BERCH, Chicago, Ill.
- 262,751. Railway Crossing: EDW. E. DWIGHT, Toledo, Ohio.
- 262,662. Car Ventilator: HENRY A. GAGNE, New York, N. Y.
- 262,759. Railway Safety Switch: JAMES H. GAMBLE, Nebo, Ill.
- 262,659. Car Coupling: EZRA E. FRANZ, N. Manchester, Ind.
- 262,800. Car Brake: P. LORD, Montreal, Canada.
- 262,802. Railway Gate: RICHARD W. MAFFITT, Philadelphia, Pa.
- 262,808. Car Coupling: THOS. F. McNAIR, Dawson, Ga.
- 262,099. Car Wheel: GEO. W. MILLTIMORE, Chicago, Ill.
- 262,910. Making Car Wheels: GEO. W. MILLTIMORE, Chicago, Ill.
- 562,825. Car Starter: THOS. OWENS, Yonkers, N. Y.
- 262,856. Car Heater: JAS. M. THAYER, Randolph, Mass.
- 262,707. Stock Car: STEPHEN P. TALLMAN, Dunellin, N. J.
- 262,839. Railway Jack: IS. SHONDY, JR., Paw Paw Grove, Ill.
- 262,633. Elevated Railroad: LEVI J. WING, New York, N. Y.
- 262,880. Car Coupling: D. W. WOODS, St. Louis, Mo.

NEARLY every day brings its accounts of men, women and children killed while walking on the tracks, and even while using them as lounging places. It may be useless work to point or print the moral, but many people seem to need its application. It is to keep off the path of the iron horse, unless you must cross it—then stop, look, listen, and if there is no near sign of danger, get over and away from the track in the quickest feasible way.

KNOX & SHAIN,

Manufacturers of Engineering and Telegraphic Instruments. No. 716 Chestnut Street, Philadelphia. Two Medals awarded by the Franklin Institute, and one by the Centennial.

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FITCHBURG RAILROAD**HOOSAC TUNNEL ROUTE
WEST.****6.30 A. M. ACCOMMODATION.**

Connecting at Syracuse, N. Y., at 7.15 P.M., with through sleeping cars for Cincinnati, Cleveland, Toledo, **DETROIT AND CHICAGO.**

**3.00 P. M. CINCINNATI
EXPRESS.**

Pullman Sleeping Car attached, running through to Cincinnati without change. (Only Line running Pullman Cars from Boston.) This car runs via Erie Railway and N.Y., P. & O. R.R., making direct connection for Louisville, St. Louis, Kansas City, New Orleans, and all points in Texas and New Mexico.

**3.00 P. M. ST. LOUIS
EXPRESS.**

THE ONLY LINE which runs a THROUGH SLEEPING-CAR from

**BOSTON TO ST. LOUIS WITHOUT CHANGE!
ARRIVING AT 8.00 A.M. SECOND MORNING.**

Through sleeping car for Buffalo, Toledo, Fort Wayne, Logansport, Lafayette, Danville, Tolono, Decatur and St. Louis, making direct connection with through Express Trains for Kansas, Colorado, Texas, and all points in the

SOUTHWEST.**6.00 P. M. PACIFIC
EXPRESS.**

The only line running a through sleeping car via Buffalo and Detroit without change, arriving at Chicago at 8.00 A.M. second morning, making sure connections with through Express Trains for Iowa, Nebraska, Kansas, Colorado, the Pacific Coast, Wisconsin, Minnesota and all points in the

WEST AND NORTHWEST.

THE ABOVE TRAINS RUN DAILY, SUNDAYS EXCEPTED.

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JOHN ADAMS, General Superintendent. F. O. HEALD, Acting Gen'l Passenger and Ticket Agent.

In effect January 9th, 1888, and subject to changes.

Artificial Leather.

The old proverb, "There is nothing like leather," was true in the past, but is no longer so, as an article is now made which for many purposes is better than leather, and which can hardly be distinguished from the real article. Several years ago Mr. Charles A. Evans, of Salem, N. H., commenced a series of experiments, and after a large outlay of time and money, and after many discouraging failures, achieved complete success. The various processes were patented, special machinery obtained, a large brick factory erected at Salem, N. H., a stock company formed, and for the last four years the inventor has been reaping his reward for his patient labor.

THE EVANS ARTIFICIAL LEATHER

is very largely used by the boot and shoe manufacturers of Lynn, Haverhill and Brockton, as from the ability to make the leather in any shade of color from black to white—blue, pink, red, yellow, purple, gold, silver, or bronze—and its great *cheapness*, it serves them better than real leather. It is adapted to use for boot tops, piping, side-stays and linings, and is made in imitation of goat-skin, sheep-skin, or in fact of any kind of leather, by the use of rollers which emboss it with the grain of any leather, while preserving a fine, clear, bright surface, and in no way impairing its strength. Horse-hide and goat-skin are as fully imitated as sheep-skin, and its capabilities in that line are without limit. But its use for shoes is but a small part of its adaptability. It is also largely used in the manufacture of trunks and satchels, jewelry, and fancy boxes, and by upholsterers, carriage makers, car builders, bookbinders, etc., and is made in colors, weights and widths especially adapted for the different purposes. For lambrequins it has all the essential qualities, and can be made in any color of the most delicate shade; and from the fact that it can be stamped and gilded, it is being used largely. The surface admits of its being used as a panel and painted in any reproduction of hunting, fishing or landscape scenes. Its pliability admits of its being worked into rosettes or festoons, and all forms of decoration.

At the Company's office and sales room, No. 92 Pearl street, Boston, the writer was ushered into a room of which the walls were made up of pictures painted on the artificial leather, while the ceiling was formed by folds of the same material, in more than the colors of the rainbow. The chairs were upholstered in the artificial leather of various colors, and almost everything in the room was "leather."

A visitor to the office and salesroom of the Company, located as above, will be surprised at the number of colors and shades, and can there see boots, shoes, boxes, music rolls, tables, chairs, lambrequins, ceilings, walls, and all sorts of things made of artificial leather, and will feel almost as if natural products had been outdone by human invention. As Mr. Walter N. Dole, the general agent, puts it: "It looks and feels like leather, and is stronger and more durable than many kinds of leather, while it is unaffected by heat or cold, and is impervious to oil or water. It

won't stick, crack or peel off, and it only costs about one-half the price of real leather."

Value of a First-Class Express Train.

A RAILROAD official recently gave some interesting figures as to the value of the mid-day express train from New York, west, which was a fair representative of the fast express trains on the leading American railroads. There were, he said, an engine, tender and eight cars. The engine and tender, which are considered together, were valued at \$10,500; the baggage car, 1,000; the postal car, \$2,000; the smoking car, \$5,000; the two ordinary passenger cars, \$10,000 each; and three palace cars, \$15,000 each—total \$83,000. This is a low-rather than an excessive estimate for one of the fast expresses, as some of them, with more cars, are worth \$100,000 at least. The palace cars, put down at \$15,000, are in many cases worth an average of \$18,000. These cars came into use soon after the sleeping-coaches, the first being used in 1863. In some instances these cars have cost as high as \$25,000 and \$30,000, where the interior workmanship was very elaborate. It is an interesting reflection that the safety of one of these costly trains, to say nothing of the passengers, devolves almost wholly upon one man—the engineer. There are other men, the conductor, baggage master, fireman, and three or four brakemen, but the hand upon the lever and the brain directing it have an immense responsibility.

The Mound-Builders.

DR. DANIEL G. BRINTON has sought to answer the question, Who were the mound-builders? by inquiring whether and to what extent the tribes who inhabited the Mississippi Valley and the Atlantic slope were accustomed to make works similar to the mounds. It is clear, from several accounts, that the Iroquois were accustomed to construct burial-mounds, and their neighbors the various Algonquin tribes, occasionally raised heaps of soil. The Cherokees do not appear to have been real mound-builders, but they appreciated the convenience of mounds, and put their more important buildings upon them when they had them at hand. The tribes among whom we can look for the descendants of the mound-builders with the greatest probability of success are the tribes of the great Chahta-Muskokee family, which includes the Choctaws, Chickasaws, Creeks, Seminoles and Natchez. They "seem to have been a building race, and to have reared tumuli not contemptible in comparison even with the mightiest of the Ohio Valley." Cabeza de Vaca, who accompanied the expedition of Pamfilo de Narvaez in 1527, mentions a place where the natives were accustomed to erect their dwellings on a steep hill, and dig a ditch around its base as a means of defence. All the accounts of those who participated in Ferdinand de Soto's expedition describe the Southern tribes as constructing artificial mounds, using earthworks for defence, excavating ditches and canals, etc. Thus La Vega tells how the caciques in Florida formed earth into a kind of platform "two or three pikes in height, the summit of which is large enough to

give room for twelve, fifteen or twenty houses to lodge the cacique and his attendants. At the foot of this elevation they mark out a square place, according to the size of the village, around which the leading men have their houses." Biedma says that the caciques of a certain region "were accustomed to erect near the house very high mounds (*terres tres-clevees*), and there were some who placed their houses on the top of the mounds." The Huguenots who attempted to settle in Florida described similar structures as marking the sites of the houses of the chief. William Bartram, the botanist, who visited the Creeks in the last century, found that they had "chunk-yards" surrounded by low mounds of earth, at one end of which, sometimes on a moderate artificial elevation, was the chief's dwelling, and at the other end the public council-house. Large burial-mounds are also spoken of as being made by these tribes. Many of the mounds in the Gulf States are very large. One in the Etowah Valley, Georgia, has a capacity of 1,000,000 cubic feet. The Messier mound, near the Chattahoochee River, contains about 700,000 cubic feet, and is twice as large as the great mound near Miamisburg, Ohio. Dr. Brinton's views are parallel, if not identical, with those worked out by the late Lewis H. Morgan in his "Houses and House-Life of the American Aborigines."

A Fish Ship.

A SPLENDID iron steamship is now in course of construction at the ship-yards of Pusey, Jones & Co., Wilmington, Del., for the United States Government. It will cost nearly \$200,000, and is to be used expressly for the Fish Commission, to gather and preserve sea fish. The vessel will be sent to London with millions of specimens of small fish and sea bugs, to be exhibited at the great Fish Exposition to be held there in May next. She is to be christened the Albatross; is 200 feet long, 27 feet 7 inches beam, 16 feet 9 inches depth of hold, and of 800 tons burthen. She will be supplied with a deep-sea dredge with eight miles of wire rope, for the purpose of fishing up specimens of animal life which may be found miles below the surface of the ocean. Past Assistant Engineer G. W. Baird is superintending the construction of the ship, which will be launched in about four months. The Albatross will be under the direction of United States Fish Commissioner Baird, who will go with her to the London Exposition, which will be the greatest fish show ever seen in the world. There will be on exhibition there every kind of animal known to exist in the seas and rivers of the world, from a whale to a tadpole. All the leading fish culturists and dealers in the United States will send exhibits, which, in addition to the millions of preserved exhibits sent by the Government, will probably make the display the most complete of any on exhibition. The largest number of the Government exhibits will be microscopic specimens, but thousands of curious and valuable specimens preserved in liquor, and now at the Smithsonian Institution, will be put on board the Albatross and sent over.

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PRICES LOWER THAN OTHER MANUFACTURERS.

NO PAYMENT REQUIRED UNTIL TUBES ARE TESTED AND SATISFACTORY.

N. B.—Send for Stock List.

A Patent to Check Vibrations in Elevated Railroads.

On July 25th a patent was issued to Mr. Thomas Coates, of Waterville, N. Y., for an invention to check vibration in elevated railroads and in buildings, which is simple and inexpensive, and yet promises to secure the desired result. It is a subject in which many of our readers, as well as the public generally, are interested, and as from a personal examination of the model, and an explanation of the principle of its action, we believe it will supply a long desired remedy for the deafening noise we are in this city subjected to all along the line of the elevated railroads, we copy the following from the specifications of the patent, regretting that no cuts have been made to fully illustrate the invention:

"This invention consists in the combination with the stringers, transverse girders and the columns of an elevated railroad, of iron bars extended into the ground, whereby the vibrations caused by a passing train are checked and conducted to the ground; and also in the mode of checking vibration in elevated railroads and other structures, by connecting iron bars with the frame of the structure, and then extending the bars into the ground."

This invention is not confined in its application to elevated railroads alone, but can be used with equal advantage in churches and other public buildings upon which bells are suspended, to prevent the occupants of the buildings from being annoyed by the vibration when the bells are rung. In this case a rod will be attached to the frame on each side of the bell and carried on over the roof to line of wall, and continued down on face of wall or in a channel of a little greater depth than the thickness of the rod cut in face of wall until it reaches the lower floor in basement and then enters the ground. This has been tried in several instances by the inventor, and found to act as a complete check to the vibrations, and cannot fail to be appreciated by the public generally. A large model can be seen at the office of H. T. Coates & Co., 125 Pearl street, New York, and we think all interested in matters of this kind will feel repaid for a visit.

The Coal Trade.

The leading coal-carrying companies make the following reports of their tonnage for the week ending August 5, and for the year to that date, compared with their respective amounts carried to the same time last year:

	Week.	1882.	1881.
Reading Railroad	184,848	5,232,332	4,994,451
Schuylkill Canal	18,211	219,322	302,453
Lehigh Valley	128,616	4,033,574	3,082,228
Delaware, Lackawanna and Western	110,636	2,523,946	2,401,214
Shamokin	25,000	611,720	615,009
Central R. R. of New Jersey	66,128	2,484,480	2,447,756
United R. R. of New Jersey	35,754	984,518	897,236
Pennsylvania Coal	37,712	758,378	741,799
Delaware and Hudson Canal	80,590	1,934,828	2,015,406
Huntingdon and Broad Top Mountain	6,971	248,855	300,124
Penn. and New York	27,168	965,221	964,957
Clearfield, Pa.	56,050	1,678,146	1,428,880

The total tonnage of anthracite coal from all the regions for the week ending Aug. 5, as reported by the several carrying companies, amounted to 622,676 tons, against 544,178 tons in the corresponding week last year, an increase of 78,498 tons. The total amount of anthracite mined for the year is 15,984,882 tons, against 15,411,923 tons for the same period last year, an increase of 572,966 tons. The quantity of bituminous coal sent to market for the week amounted to 69,728 tons, against 103,996

tons in the corresponding week last year, a decrease of 34,268 tons. The total amount of bituminous mined for the year is 2,448,579 tons, against 2,893,584 tons for the corresponding period last year, a decrease of 445,005 tons. The total tonnage of all kinds of coal for the week is 692,404 tons, against 648,174 tons in corresponding week last year, an increase of 44,230 tons, and the total tonnage for the coal year is 18,433,468 tons, against 18,305,507 tons to same date last year, an increase of 127,961 tons. The quantity of coal and coke carried over the Pennsylvania Railroad for the week ending August 5 was 190,064 tons, of which 145,077 tons were coal and 44,987 tons coke. The total tonnage for the year thus far has been 6,493,736 tons, of which 4,759,370 tons were coal and 1,734,066 tons coke. These figures embrace all the coal and coke carried over the road, east and west. The shipments of bituminous coal from the mines of the Cumberland coal region for the week ended Aug. 5 were 16,200 tons, and for the year to that date 583,543 tons, a decrease of 605,587 tons as compared with the corresponding period of last year. The shipments were: To the Baltimore and Ohio Railroad—For the week, 13,499 tons; year, 483,324 tons; decrease as compared with 1881, 300,345 tons. Chesapeake and Ohio Canal—Week, 2,700 tons; year, 21,535 tons; decrease as compared with 1881, 231,780 tons. Pennsylvania Railroad—Week, none; year, 74,842 tons; decrease as compared with 1881, 76,873 tons. The Reading Railroad shipment for last week, ending August 12 was about 188,500 tons, of which 62,000 tons were sent to and 54,000 tons shipped from Port Richmond, and 11,900 tons sent to and 11,500 tons shipped from Elizabethport.—*Philadelphia Ledger*, Aug. 14.

Illinois Central Railroad.

DURING the month of July, 1882, the traffic on the lines operated by this Company was (estimated):—

In Illinois.....	\$618,478 00
In Iowa (leased lines).....	133,773 00

Total.....\$752,251 00
The traffic for the same month in 1881, on the same mileage, was (actual):—

In Illinois.....	\$548,317 52
In Iowa (leased lines).....	171,686 24

Total.....\$720,003 76

During July, 1882, the land sales were 560.58 acres for \$3,400.65, and the cash collected on land contracts was \$4,203.57.

L. A. CATLIN, *Secretary.*

Anthracite Coal Tonnage.

THE following is an official statement of the anthracite coal tonnage for the month of July, 1882, compared with the same month in 1881:—

	1882.	1881.
Philadelphia and Reading Railroad.....	653,499	639,579
Lehigh Valley Railroad.....	548,743	492,033
Central Railroad of New Jersey.....	416,072	378,635
Delaware, Lackawanna and Western.....	441,135	381,509
Delaware and Hudson Co.....	296,932	285,804
Pennsylvania Railroad.....	218,489	206,517
Pennsylvania Coal Co.....	151,503	148,290
New York, Lake Erie and Western Railroad.....	30,876	47,732

Total.....2,757,249 2,572,099

The total production up to July 31, 1882, was 15,325,100 tons, against 15,039,596 tons at the same time last year, an increase of 285,504 tons. The stock of coal on hand at tide-water shipping points, July 31, 1882, was 575,532 tons, against 583,936 tons at the same time last year, a decrease of 8,404 tons.

THE bridge across the Missouri River at Blair, Neb., which is to cost \$1,000,000, will connect the Blair system of railways in Iowa and Nebraska, and give the Chicago and Northwestern Railway access to its allied connections west of the Missouri.

THE Wisconsin Central Railway Company is making important additions to its rolling stock.

FIVE complete railway trains, consisting of twelve carriages each, have been purchased in England for use in Egypt.

THE superstructure of the bridge to be erected by the Delaware, Lackawanna and Western Railroad over the Lackawanna River at Scranton, Penn., will be commenced on the 19th inst.

THE Supreme Court of Iowa rules that a police officer is guilty of manslaughter if he strikes a prisoner a fatal blow with a club, to defeat an attempt to escape, unless the officer has reason to believe that he is in danger of great bodily harm or loss of life.

THE seventeenth annual exposition of the Mechanics' Institute, San Francisco, was opened on the 15th inst., in the new pavilion. The opening address was made by President P. B. Cornwall. The display is very creditable. The exposition will continue for one month.

A NEW brake, the invention of Mr. Tremaine, a conductor, has, after careful trial, been adopted by the Chicago, Milwaukee and St. Paul Railway Company. The brake is an ingenious contrivance, of such construction as to make it unnecessary to remove the wheels upon which the brake acts more than once during six or eight months. It is reported that Mr. Tremaine has been offered by George M. Pullman \$40,000 for the right to use the patent on his sleeping-cars.

AT a meeting of the McLeod Air Railroad Signal Company, held in Hartford, Conn., on the 8th inst., it was reported that the stock was being rapidly subscribed for, and is readily selling at par—\$100. There are 10,000 shares. The following is a list of officers: C. A. Loud, president, Boston; Thos. R. Sharp, vice-president and general manager, New York; J. G. Stewart, treasurer, Boston; J. S. McLeod, superintendent, Boston; H. B. Freeman, attorney, secretary and assistant treasurer, Hartford; C. P. Gorely, assistant secretary and attorney, Boston.

THE gentleman mentioned in the following paragraph appears to be fully as popular in St. Thomas as he was during his residence in the Forest City, and he is a genial, whole-souled man, who enjoys the high esteem of the employees generally. The Journal says: "Mr. Wm. Chambers, locomotive foreman of what used to be the Great Western Railway shops in this city, but now the Grand Trunk, came out from England with the first locomotive purchased by the former company, and was in the service of the Great Western all the time that company was in operation—27 years. To-day is his first day's service with the Grand Trunk, and he appears to be capable of serving that company for a good many years. He is the heaviest and one of the best men the Grand Trunk gets by the fusion; he weighs 287."—*London (Ont.) Free Press*, Aug. 12.

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A Natural Copper-Plating Bath.

Two years ago, at a mine operated by William Utter, at Campo Seco, near Milton, water came in and work stopped. To keep the large iron-bound and iron-baled bucket used to hoist rock from drying up and falling to pieces it was let down into the water. Next season, when it was drawn up, lo, a miracle! It was copper-bound and copper-baled. From this has sprung quite an industry, and the mine has been sustaining itself from ore water ever since. The water contains an acid which has the property of taking into solution the particles of iron thrust into it, and it has also copper in solution which is let go, particle by particle, as the iron is picked up. It is a simple chemical exchange, and this mine may make another profit still if it will get another chemical into the water which will make the acid lay down the iron, which, as a black flood, the water carries down into the Stanislaus River. The copper industry consists in taking bundles of scrap iron and old tin to the mine, where it is thrust into vats of water caught up, in which the metals are soon changed to copper, the residue of the iron taking the form of a black stream and flowing away. To make sure of making the water swap all its copper for iron, which it is glad to do without boot, one vat is placed below another down the bank to the river, and when the water escapes it has eaten its fill of iron and left pay for its meal in genuine copper.—*Stockton (Cal.) Mail.*

Robert Burdette's Counsel to His Son.

My son, when you hear a man growling and scolding because Moody gets \$200 a week for preaching Christianity, you will perceive that he never worries a minute because Ingersoll gets \$200 a night for preaching atheism. You will observe that the man who is utterly shocked because Francis Murphy is paid \$150 a week for temperance work seems to think it is all right when the barkeeper takes in twice so much money in a single day. The laborer is worthy of his hire, my boy, and he is just as worthy of it in the pulpit as he is upon the stump. Is the man who is honestly trying to save your immortal soul worth less than the man who is only trying his level best to go to Congress? Isn't Moody doing as good work as Ingersoll? Isn't John B. Gough as much the friend of humanity and society as the bartender? Do you want to get all the good in the world for nothing, so that you may be able to pay a high price for the bad? Remember, my boy, the good things in the world are always the cheapest. Spring water costs less than corn whisky; a box of cigars will buy two or three Bibles; a gallon of old brandy costs more than a barrel of flour; a "full hand" at poker often costs a man more in twenty minutes than his church subscriptions amount to in three years; a State election costs more than a revival of religion; you can sleep in church every Sunday morning for nothing, if you're mean enough to dead-beat your lodgings in that way, but a nap in a Pullman car costs you two dollars every time; fifty cents for the circus and a penny for the little ones to put in the missionary box; one dollar for the theatre, and a pair of old trousers, frayed at the ends, baggy as to

the knees and utterly bursted as to the dome, for the Michigan sufferers; the dancing lady who tries to wear the skirt of her dress under her arms and the waist around her knees and kicks her slipper clear over the orchestra chairs every night gets \$600 a week, and the city mission gets \$500 a year; the horse race scoops in \$2,000 the first day, and the church fair lasts a week, works twenty-five or thirty of the best women in America nearly to death, and comes out \$40 in debt—why, my boy, if you ever find yourself sneering or scoffing because once in a while you hear of a preacher getting a living, or even a luxurious salary, or a temperance worker making money, go out in the dark and feel ashamed of yourself, and if you don't feel above kicking a mean man, kick yourself. Precious little does religion and charity cost the old world, my boy, and when the money it does get is flung into its face, like a bone to a dog, the doner is not benefitted by the gift, and the receiver is not, and certainly should not, be grateful.—*Burlington Hawkeye.*

The Brooklyn Bridge.

THE total weight of metal in the Brooklyn bridge in round numbers is 1,000 tons. Of this 1,858,279 pounds are wrought iron, 82,092 pounds steel, 27,440 pounds steel pins and 146,891 pounds cast iron. Following are the principal dimensions of the bridge:—

Construction commenced on January 2, 1870.
Size of New York caisson, 172x102 feet.

Size of Brooklyn caisson, 168x102 feet.

Timber and iron in caisson, 5,253 cubic yards.

Concrete in well-holes, chambers, etc., 5,669 cubic feet.

Weight of New York caisson, about 7,000 tons.

Weight of concrete filling, 8,000 tons.

New York tower contains 46,945 cubic yards masonry.

Brooklyn tower contains 38,213 cubic yards masonry.

Length of river span, 1,595 feet 6 inches.

Length of each land span, 930 feet, 1,860 feet.

Length of Brooklyn approach, 971 feet.

Length of New York approach, 1,562 feet, 6 inches.

Total length of bridge, 5,989 feet.

Width of bridge, 85 feet.

Number of cables, 4.

Diameter of each cable, 15 $\frac{1}{2}$ inches.

First wire was run out May 29, 1877.

Cable making really commenced, June 11, 1877.

Length of each single wire in cables, 3,578 feet 6 inches.

Ultimate strength of each cable, 12,200 tons.

Weight of wire, 12 feet per pound.

Each cable contains 5,296 parallel (not twisted) galvanized steel, oil-coated wires, closely wrapped to a solid cylinder, 15 $\frac{1}{2}$ inches in diameter.

Depth of tower foundation below high water, Brooklyn, 45 feet.

Depth of tower foundation below high water, New York, 78 feet.

Size of towers at high water line, 140x59 feet.

Size of towers at roof course, 136x53 feet.

Total height of towers above high water, 278 feet.

Clear height of bridge in center of river span above high water, at 90 degrees Fahrenheit, 135 feet.

Height of floor at towers above high water, 119 feet 3 inches.

Grade of roadway, 3 $\frac{1}{2}$ feet in 100 feet.

Height of towers above roadway, 159 feet.

Size of anchorages at base, 128x119 feet.

Size of anchorages at top, 117x104 feet.

Heights of anchorages, 89 feet front, 85 feet rear.

Weight of each anchor plate, 23 tons.

Engineer, Colonel W. A. Roebling.

—*Scientific American.*

Singular Recovery of a Watch.

THE Charlottesville, Va., correspondent of the Richmond *Dispatch* says that the Chesapeake and Ohio Railway Company have two bridges east of that place, just at the foot of Monticello Mountain— one is over the Rivanna, the other over Moore's Creek. The company has a watchman employed to follow all trains over these bridges and keep a general surveillance over them. This watchman, when not thus engaged, sometimes catches fish from the river and sometimes goes to hunt squirrels on the north side of Monticello. During one of these latter trips in the spring of last year he had the misfortune to lose his watch. This was very inconvenient for him, for it was a good one, and a good watch costs money, and is hard for a poor man to get; besides, he was deprived of all means of knowing just at what time to be on duty, except when he was at his house or contiguous thereto. One day in the fall thereafter, as he was going down the road towards the second bridge, from which a good view of the mountain can be had, and thinking about his lost watch, he cast his eyes over on the mountain side and saw something glistening in the rays of the autumn sun. It struck him that this might be his watch. He went back to his house, returned with his wife, and finding again the glistening object directed her to watch it and guide his foot-steps by her voice—the leaves were off the trees and a man could be easily seen way up the mountain-side—and started for the object. His wife, faithful to her part of the work, directed to the exact spot, where he found his watch, intact and practically uninjured.

THERE is an engineer by the name of Meyers on the St. Louis and Cairo Narrow-Gauge Railroad who has had a variety of experience. He has run locomotives in Russia, Cuba and South America, and in most all parts of North America. He introduced the first American locomotives in Brazil, and the Emperor, Dom Pedro, having a turn for mechanics, treated him splendidly, and made him some fine presents upon his departure from that country to return home. Mr. Meyers is said to be a very careful and trustworthy engineer. Much of his foreign experience is due to the fact that formerly he was in the employ of the Baldwin Locomotive Works, and was sent out to other countries frequently to set up their locomotives.